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Missing

Author: Philip Brady

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Price: €12

"In the English language", Jodi Picoult has observed, "there are orphans and widows, but there is no word for the parents who loses a child." It is as if the language itself is rendered inarticulate; not alone is there no descriptive noun for this form of grief, but the description and articulation of what has happened is almost beyond words, especially for those who have suffered such a bereavement. In the circumstances, any attempt to express the sorrow of such a loss requires a particular kind of courage. Philip Brady has no shortage of such courage.

In "Missing", his fifth collection of poetry, Brady visits a wide range of themes; class reunions, travel, the Enfield Road upgrade. There are poems about nature as well as nurture; there are as well knowing nods to the clogged-up health system and the demands on a busy medical practice (Brady is a family doctor living and working in Edenderry, Offaly): one haiku reads: "Busy waiting room;/ The optimistic patient/Started *War and Peace*". Often the poems have the rhyme and rhythm of street ballads; they could as easily be sung as recited. Some might cavil at the inclusion of so many pieces; a more tightly edited collection might be easier to digest. The inclusion of a laudatory introductory essay seems an unnecessary crutch; Brady's work can and should stand on its own two feet.

But the playfulness of many of the poems is in sharp contrast to the central section. At the heart of this book is heartbreak, a child-shaped absence. One spring day Brady's son Michael, a college student and musician, disappeared; eventually his body was found at Oranmore. In the title poem Brady recounts in excruciating detail the efforts of the search-party combing the coastline "where every creek might/ hold a clue or every crevice hide its secret". The poems in this section of the book are the most compelling. Brady's eye is keen; even as he leaves the Garda station afterwards, he notices the photograph of his son has been replaced by the picture of another missing person, a young man, "radiant with hope". Acutely observed, this detail is a striking – and generous - reminder of the difficulties encountered by so many young men growing up here as they try to come to terms with the *lacrimae rerum* of modern Ireland. Brady is admirably frank about his own pain: "I will build a different life./I have no choice I suppose", he writes in "Depression", which ends: "The darkest is now over./But it will never be as bright again". At its best Brady's is a dark, brave, raw voice.

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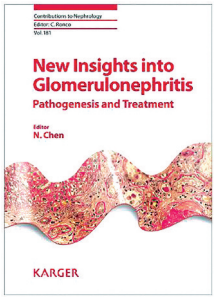
New Insights into Glomerulonephritis Pathogenesis and Treatment

Editor: N. Chen

Publisher: Karger

Glomerulonephritis is the leading cause of kidney failure in China whilst in western countries Diabetic nephropathy and hypertensive disease is the major cause. This textbook edited by Nan Chen from the School of Medicine in Shanghai in China brings together a number of manuscripts by mostly Chinese authors concerning recent developments in the understanding of the molecular pathogenesis and treatment of glomerulonephritis.



Dr Xie describes in detail what has been learned recently from Genome wide association studies of the genetic associations with IgA nephropathy and reports on mutations in the HLA DQA1 system with the occurrence of IgA nephropathy. However despite the enormous variations in IgA nephropathy across the world's population genetic studies to date account for only 5% of the variation in the prevalence. The last ten years has seen a revolution in the understanding of the molecular pathogenesis of different forms of focal segmental glomerulosclerosis although familial forms of FSGS account for only a minority of cases of FSGS. Now more than six genes have been described to be associated with the occurrence of familial forms of FSGS. Dr Zhang describes the Chinese experience of more than 80 FSGS pedigrees and their identification of mutations in the ACTN4 and TRPC6 genes. The textbook also describes the Chinese experience of ANCA associated vasculitis.

In summary the textbook would be of interest to Nephrologists with a particular interest in glomerulonephritis.

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In this Month's IMJ

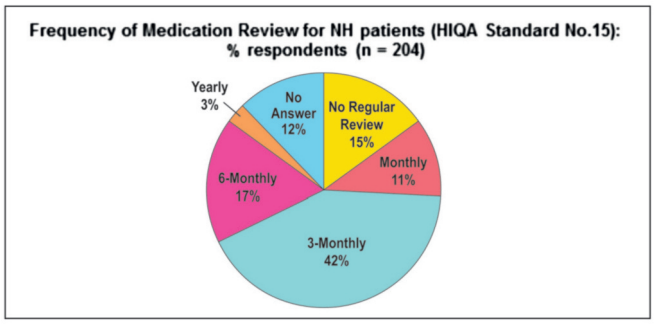
Medical students views on selection tools for medical school- a mixed methods study: Stevens et al surveyed year 1 medical students on the current selection criteria for medical school entry. There was almost universal acceptance (98%) of the school leaving exam. Approximately three quarters (76%) were in favour of the HPAT but there were reservations about section 3 which relates to non-verbal reasoning. Other potential tests that found acceptance were interviews and personality tests.

Table 1: Qualitative Responses According to Theme

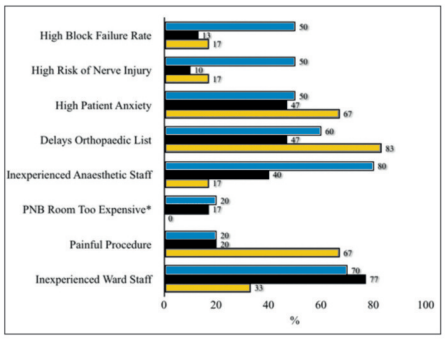
Major themes	Example Quote
Fairness of the current ***systems*** of selection in Ireland	*"Now it is fair in that people less able to regurgitate information have a chance"* *"Previously many people get left out of medicine who are more than capable of being excellent at the course"*
Suggested changes to the system and alternative selection tools	*"Interview for maturity level, attitudes, focus and commitment"* *"Perhaps more CAO points given to relevant subjects e.g. biology chemistry"* *"Personal statements-,get to know what sort of person is actually applying".* *"..if people have good science grades and 600 points HPAT should not prevent entry".*
Fairness of HPAT-Ireland	*"I felt it was unfair that not enough information was given free of charge"* *"the nonverbal reasoning section seems to be suited towards males more"* [referring to Section 3]
HPAT Design and subsection relevance	*"There was not much time to complete each question"* *"Interpersonal understanding is not really well examined in a written exam"* [referring to Section 2] *"I don't see how finding a random pattern in shapes is really relevant"* [referring to Section 3]
Use and impact of preparatory courses for HPAT-Ireland	*"was a definite help to go through styles of questions, work on timing and how to answer a certain style of question"* *"helped figure out timing of questions"*

A national survey of implementation of guidelines for gestational diabetes mellitus: O'Higgins et al state that national guidelines for the management of gestational diabetes mellitus were published by the HSE in 2010. However the authors, in a national survey of all obstetric units, found that the guidelines have only been partially implemented. There are variations in the performance of the OGTT and in insulin use.

Primary care in nursing homes revisited: survey of the experiences of primary care physicians: Gleeson et al describe the experiences of GPs attending nursing home patients (NHPs). 71% of patients felt that NHPs required more contact time and 61% that consultations were more complex compared with other patients. 64% felt adequately trained in gerontology. There was uncertainty about the implementation of HIQA standards.

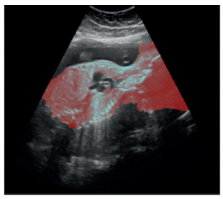


Staff attitudes to an ultrasound-guided peripheral nerve block room for orthopaedic patients: Moore and Duggan address the use of nerve block for orthopaedic procedures. In the survey of stakeholders a number of reservations were articulated. The orthopaedic surgeons were concerned that it would delay theatre lists, while anaesthetists and nurses were worried about insufficient experience.



Imaging of gunshot injuries in a west Dublin teaching hospital- a ten year review: Murphy et al report on gunshot injuries presenting to Connolly hospital over a ten year period. They encountered 65 gunshot episodes, but chart details were available for 59 patients. Mortality rates was much higher for high velocity wounds 43% compared with low velocity gunshot wounds 6%. The authors noted a marked increase in high velocity firearms. The mean age of the victims was 27 years and there was only one female in the cohort. The paper describes the role of diagnostic and intervention radiology

A novel semi-automated method of tracking fetal movements: Bhaskar et al describe a software ultrasound program that can track the fetal movements with minimal human interaction. The authors hope that in the future the techniques will add to the assessment of fetal wellbeing.



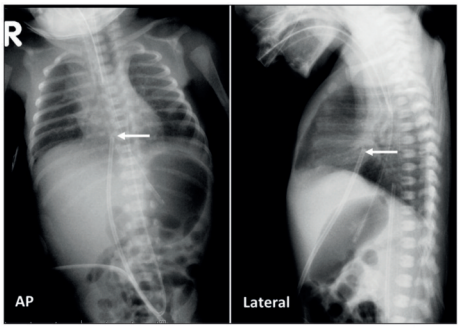
Tolerance of colonoscopy and questioning its utility in the elderly population: Rathore et al have reviewed 1474 colonoscopies. The main complication was patient discomfort which was highest in the younger patients. The indications were diagnostic 80% and therapeutic 20%. In line with the US preventative task force the authors question the value of screening for colorectal cancer in patients 76-85 years.

Placental pathology associated with small for gestational age infants: Thorne et al have examined the relationship between small for dates infants and abnormal placental pathology. In a series of 396 cases the authors found abnormal placental findings in 84.1% of cases. The commonest abnormality was uteroplacental ischaemia 37.4%. Villitis was found in 17.4 % of cases and this can be associated with infant neurological impairment.

Table 1 Placental Pathology in SGA Infants

Category	Finding	Principal Pathology (%)	Co-existing Pathology (%)	Prevalence*
1	Uteroplacental Ischaemia	148 (37.4%)	15 (3.8%)	3.7%
2	Fetal Thrombotic Vasculopathy	29 (7.3%)	26 (6.6%)	2.9%
3a	Villitis, low grade	31 (7.8%)	16 (4.0%)	9.9%
3b	Villitis, high grade	38 (9.6%)	12 (3.0%)	1.7%
4	Increased perivillous fibrin w/without intervillositis	20 (5.1%)	6 (1.5%)	0.1%
5	Delayed Maturation	62 (15.6%)	13 (3.3%)	5.7%
6	Small Normal	23 (5.8%)		
7	Normal	40 (10.1%)		
8	Other	5 (1.3%)		
Total		**396**	**88**	

Using lateral radiographs to determine umbilical venous catheter tip position in neonates: Butler et al undertook a paired AP and lateral x-rays of umbilical venous catheter (UVC) positions in 25 newborn infants. Measurements using lateral views were more reliable 0.99 vs 0.93.



Changing Views on Medical Education and Training

The primary purpose of medical education and training is to produce doctors capable of delivering effective, economically sustainable, healthcare to society. The new emphasis in medicine is on quality and cost. We are aware that there are many useless therapies and that low value care is both expensive and sometimes hazardous. The next generation of doctors needs to be educated in ways that eradicate these anomalies from the system.

Ash and Weinstein[1] point out that medical training has remained largely unchanged. There is a lack of evidence on how best to improve the medical workforce. Education has not been subjected to the same rigorous examination that is encountered in biomedical research. This is, perhaps, understandable. It is more difficult to quantify whether medical schools and postgraduate training programmes are doing a good job. Currently evaluations are largely based on whether the student or trainee is receiving sufficient lectures, enough clinical exposure, and her ultimate success in the assessments and examinations. None of these measures inform us on the relationship between clinical competency and better patient outcomes. These considerations are important and lead on to the question whether training should be time-based or competency-based. Currently all our training programmes are time-based although we are well aware that trainees progress and advance at different rates.

The matter of clinical competency has been brought into stark prominence with the introduction of EWTD. Previously, competency was acquired in part by osmosis from the long hours of clinical exposure. That vehicle has now been removed and it will need to be actively replaced by new innovate ways of training. The RCPI is aware of the current challenges to the traditional models of medical education worldwide. The Imrie Report[2] published by the RCPI in July 2014 examines the key issues in training 21st century clinical leaders. It recommends the move towards a hybrid model of competency-based medical education. Efforts need to be made to reduce the interval from entry to completion of training by removing unnecessary barriers and incentives to step out of training. Currently it can take up to 15 years to become a specialist which is simply too long. There needs to be more transparency in training programmes and the good competent trainee should be able to progress seamlessly through the system. The training must be commensurate with a good work-life balance and equally accessible to both genders. The day is gone when medical training was just for single young men who lived in hospitals for long periods.

The ePortfolio should be developed and expanded as an effective tool for trainees and trainers and not simply as a record of what the individual has done. The training bodies should be producing trainees who on completion of training are ready to effectively work as consultants. Questions that need to be asked include whether the trainee can speak to his patients in a straightforward manner and whether he can work comfortably alongside his colleagues. Historically the emphasis has been on what the doctor knows but now the emphasis is on how he can use that knowledge. Assessments should be based more on observation of trainees at work to ensure that they are functioning at the required standard.

The Irish Medical Organisation and the Forum of Postgraduate Training Bodies are agreed on the need for protected time for trainees. There are 4 categories of training time: scheduled and protected time off-site attending courses and faculty study days, on-site scheduled educational activities, participation in technical activities under trainer supervision, and research time. The NCHD is entitled up to a maximum of 18 working days per 6-month period to undertake relevant courses, study leave to study for and sit exams, and to attend interviews.

The RCPI has undertaken a major review of the MRCPI examinations led by Dr. John Norcini, Foundation for Advancement of International Medical Education and Research (FAIMER). The revised format sees a greater level of communication between the candidates and examiners. The process now consists of 2 long cases lasting 25 minutes each, 5 short cases including a communication skills station, each 10 minutes duration.

The RCPI Exemplar Programme, established in 2012, is a quality improvement initiative looking at basic specialist training, the registrar training programme, and higher specialist training. The focus is on pursuing excellence in the delivery of training, ensuring consistency in structure, improving support for trainees on the hospital site, developing a structure for career tracking. The Exemplar model allows for better engagement for the trainee with the trainer, improved mentoring, and more opportunities to participate in decisions that affect training. One of the features of the Exemplar programme is the appointment of trainee representatives for each hospital. These trainees act as an important link between the RCPI and their hospital. Professor John Crowe, President RCPI, in his annual address Oct. '13, stated that the Exemplar training programme is under continuous development with the aim of achieving a uniform standard of training excellence throughout all hospitals nationally. The initiative is being further underpinned by the 'physicians as trainers' courses. Good quality training is important and when measured has been shown to benefit patient outcomes. It is about getting the right balance between 'learning by doing' and 'learning by watching'. Asch et al[3] in a study of maternal obstetric complication rates found that obstetricians trained in the best residency programs had rates one third lower than those in the lower ranked programs.

It is now recognized that professional improvement is a continuous process and does not stop when the trainee has successfully completed his higher specialist training. Experience has a key role although the experience-performance relation is poorly understood. However the accumulating volume of cases treated by an established consultant consistently adds to her cognitive and/or procedural skills. Atul Gwande[4] writing in the New Yorker states that after qualifying as a surgeon one's skills seem to improve daily over the first 3 years in practice. 'Surgical mastery is about familiarity and judgment. You learn the problems that can occur during a particular procedure and you learn how to either prevent or respond to those problems. Epstein et al[5] have quantified the relationship between clinical experience and patient outcomes in obstetric practice. In a study of 6.7 million deliveries performed by 5175 obstetricians they concluded that those with more years experience had fewer maternal complications. After completion of residency the improvement was 0.21% per year in the first decade, 0.11% per year in the second decade, and 0.05% per year in the third decade of the obstetricians career.

If a health service wants to provide high quality care for its citizens it needs to invest heavily in the education and training of its doctors and it must place a premium on retaining experienced consultants.

JFA Murphy
Editor

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Medical Students' Views on Selection Tools for Medical School – A Mixed Methods Study

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[4]University College Dublin, Dublin 4
[5]University College Cork, Cork

Abstract
It is important to ensure that the tools used in Medical School selection are acceptable to students and applicants. A questionnaire was administered to year 1 medical students in 2010 to determine the suitability of a variety of selection tools and the acceptability of HPAT-Ireland in particular. There were 291 respondents a 77% response rate representing approximately one third of all school leaver entrants that year. While the majority 285(98%) were in favour of using school leaving examinations there was also support for the use of interviews 215 (74%) and other tools. Three quarters of Irish respondents 159 (76%) agreed that HPAT-Ireland is a fair test overall however section 3 (non-verbal reasoning) appeared less acceptable and relevant than other sections. A little over half had taken a preparatory HPAT -Ireland course 112 (54%). Medical school applicants appear to accept the use of non-traditional tools in the selection process.

Introduction

Selection of medical students is a complex and emotive issue. Selection tools must be feasible; economically justified and acceptable to stakeholders.[1] They must also enable the rank ordering of applicants in a meaningful manner.[2] Most importantly they must be credible, fair, valid, reliable and publically defensible.[3] Research has led to the development of new selection approaches however the perfect selection tool(s) remains elusive. In Ireland there are a number of entry routes to medicine, each with its own set of selection criteria. The selection tools used differ depending on the country of origin of the applicant, whether they apply to undergraduate or graduate programmes, or as a mature entrant.

Irish medical schools admit students from diverse backgrounds and there is a strong tradition of non EU entrants pursuing medical education both as private and government sponsored students. The globalisation of medical education means that movement of applicants between countries is increasing. Consequently Irish medical school applicants are aware of the selection tools used internationally. Since 2009, much of the focus on medical student selection in Ireland has centred on the Health Professions Admissions Test-Ireland (HPAT-Ireland). All EU undergraduate medical school applicants must take this test. HPAT-Ireland is a 2½ hour multiple choice paper with three separate sections which are: 1. Logical Reasoning and Problem Solving; 2. Interpersonal Understanding and 3. Non-Verbal Reasoning (ACER 2013). It is similar to the Undergraduate Medicine and Health Sciences Admission Test (UMAT) which is widely used in Australia and New Zealand.

A recent General Medical Council (UK) report on best practices in medical student selection highlights the importance of stakeholder acceptability.[4] One study examining the acceptability of HPAT-Ireland to GPs found that while almost 70% of GP respondents supported the use of tests such as HPAT-Ireland, a much higher proportion (97%) supported the traditional academic tool or Leaving Certificate.[5] Two previous studies also raised questions about the acceptability of HPAT-Ireland.[3,4] Students form an important stakeholder group. Positive student reaction is a key evaluative measure of the quality of a selection tool.[2] There is little published work exploring student opinions on selection tools to medicine in general and none to date with respect to HPAT-Ireland specifically. The aim of this study therefore was to establish the acceptability to medical students of a range of selection tools and in particular to explore the acceptability of HPAT-Ireland.

Methods

The study employs a mixed method "embedded" research design which allows the collection and analysis of both quantitative and qualitative data within a traditional qualitative or quantitative research design.[8,9] The qualitative arm was the minor part of this study. As no standardised instrument was available, a questionnaire was developed comprising three sections. These collected demographic information, data on the fairness and suitability of a variety of selection tools and a final section was restricted to medical students who had sat HPAT-Ireland and explored opinions on its suitability, fairness, design, level of difficulty and the role of preparatory courses. Quantitative data was gathered through a combination of closed questions and Likert scales to incorporate a degree of sensitivity and differentiation of responses.[10] Qualitative data was gathered by open ended questions and comment boxes. The questionnaire was piloted and minor modifications made. Ethical approval was granted by the Clinical Research Ethics Committee of the Cork Teaching Hospitals.

Five medical schools were invited to participate and three agreed. The questionnaire was administered locally during a scheduled large lecture slot in 2010. All first-year medical students were included in the study and the only exclusion criterion was absenteeism on the day of administration. Quantitative data were analysed using SPSS 17.0 for Windows (SPSS, Inc., Chicago, IL, USA).Qualitative responses were transcribed into Microsoft Word for windows (http://www.microsoft.com)and thematically analysed, by one author (LS). These thematic groupings were simply reported as is acceptable when the qualitative arm is the smaller part of a mixed methods study.[10]

Results

The response rate was 77% (n= 291). Response rates per school were TCD 71% (n=97), NUI Galway 98% (n=120) and UCD 62% (n=73). The total number of respondents represents just over one third of first year medical direct entry medical students nationally that year. The demography of respondents is as follows; 71.5 % of Irish nationality, 56.7% female, 68.5% had entered from public as opposed to private secondary education and the majority (85%) had entered medicine directly from second level. There were 489 free text comments. Table 1 lays out the broad themes into which these comments were categorised with example quotes.

Respondent's views on the suitability of various selection methods are presented in Figure 1. Students find the use of knowledge based tests acceptable but high proportions (78%) are also in favour of the use of interviews (78%), personality tests (74%) and adjunct admission tests (68%). Interviews were seen as an

CPD available online at www.imj.ie and questions on page 263.

Table 1: Qualitative Responses According to Theme

Major themes	Example Quote
Fairness of the current ***systems*** of selection in Ireland	*"Now it is fair in that people less able to regurgitate information have a chance"*
	"Previously many people get left out of medicine who are more than capable of being excellent at the course"
Suggested changes to the system and alternative selection tools	"*Interview for maturity level, attitudes, focus and commitment*"
	"*Perhaps more CAO points given to relevant subjects e.g. biology chemistry*"
	"*Personal statements-.get to know what sort of person is actually applying".*
Fairness of HPAT-Ireland	"*..if people have good science grades and 600 points HPAT should not prevent entry*".
	"*I felt it was unfair that not enough information was given free of charge*"
	"*the nonverbal reasoning section seems to be suited towards males more*" [referring to Section 3]
HPAT Design and subsection relevance	"*There was not much time to complete each question*"
	"*Interpersonal understanding is not really well examined in a written exam*" [referring to Section 2]
	"*I don't see how finding a random pattern in shapes is really relevant*" [referring to Section 3]
Use and impact of preparatory courses for HPAT-Ireland	"*was a definite help to go through styles of questions, work on timing and how to answer a certain style of question*"
	"*helped figure out timing of questions*"

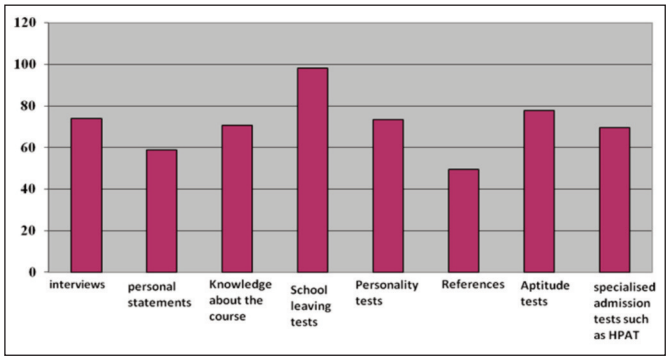

Figure 1 Respondents Views on the suitability of selection tools (% of respondents)

appropriate means to "..assess character, determination and motivation" and "..to enable one to gauge if a person's attitude is right for the course". Female students were significantly more likely to agree with the use of personal statements (p=<.01), personality tests (p=0.03) and references (p=<.01) than males.

Non-EU students were found to agree more with the use of interviews (p=<.01), knowledge about a course (p=<.01), references (p=<.01) and personal statements (p=<.01) as suitable criteria for student selection than Irish students. Conversely, Irish students were more likely to agree with the use of specialised admission tests such as the HPAT-Ireland than non-Irish respondents (p=0.04). Medical students who had attended a private secondary school were significantly more likely to agree with the use of tests such as HPAT-Ireland (p=0.03) and less likely to favour references (p=<.01) than those who attended state schools.

Section C was completed by those students who had sat HPAT-Ireland (60%; n= 175). Three quarters (76.5%, n=134) agreed that HPAT-Ireland is a fair test overall. However just over one third (36.7% n= 64) felt that it was easier for males because "logical abstract reasoning is probably easier for males" as "..spatial awareness is typically a male quality." The majority of respondents agreed that the HPAT-Ireland questions were well designed and relevant (70%, n= 123). The relevance of sub-sections 1 and 2 of HPAT-Ireland to the study of medicine was broadly agreed upon (81%, n= 142 and 88%, n= 154 for Sections 1 and 2 respectively). However, one third (32%, n= 56) felt that section 3 was not well-designed. Respondents were " not really sure what the point to Section 3" was and many described it as "irrelevant".

In terms of difficulty, 49% (n=83) felt it was a difficult test, whereas 41% (n=69) felt it was manageable. A little over half of students had taken a preparatory course (54%, n=91). Of these 79% (n=70) felt it had a positive effect on their HPAT-Ireland performance and 49% (n=75) would recommend a preparatory course to a friend.

Discussion

This is the first study to report medical student opinion of selection tools to medicine in Ireland. The demographics of respondents are representative of the demography of medical school entrants nationally.[11,12] The response rate is acceptable for a questionnaire based study and captures opinions of approximately one third of school leaver students in Year One Medicine at the time of survey. One limitation of this study is that three of the five undergraduate medical schools were represented. All were invited to participate but some declined, in some cases because students were on study leave at the time the questionnaire was administered. This study also only examines the perceptions of those who were successfully admitted under the new entry system and does not establish the views of the applicant pool. Therefore, results and conclusions need to be interpreted with these limitations in mind.

The most acceptable method of student selection among respondents remains school leaving examinations. This position reflects the opinions of Irish GPs and evidence attesting that prior academic achievement best predicts performance in medical school.[5,13,14] However this does not take account of the limitations of such tests.[4] Respondents strongly agreed that aptitude tests and interviews are suitable for selecting medical students. This suggests that students themselves feel there are other traits that need to be considered when selecting for a career in medicine that are not measured by school exit exams. It is interesting that non-EU students, who do not speak English as a first language, were in favour of interviews, a medium in which they could theoretically underperform. Interviews have a mixed record in terms of their validity and reliability in predicting future performance of medical students, with the general consensus being that they are not a very robust tool.[3,4,15]

However if highly structured interviews, with interviewer training and explicit rating guidelines, are used much better outcomes are observed.[14] Multiple Mini Interview is an example of this approach. Recent reports of its predictive validity and acceptability to students are encouraging.[16-18] Twenty per cent of those who completed HPAT-Ireland felt it was unfair test which is an area of concern. There was a strongly perceived gender bias, with one third of students agreeing that it is easier for males. Students' perceptions may have been influenced by some of the strong media attention which surrounded the introduction of HPAT-Ireland. Revised entry and selection mechanisms may have inadvertently altered the gender distribution in medical school but a number of factors have contributed to this and it is not entirely attributable to the HPAT-Ireland test.[19]

One fifth of students disagreed that HPAT-Ireland was well designed and relevant, however the acceptability of the test sections differed and in particular 32% felt that Section 3 is irrelevant and poorly designed. It is interesting that GPs had a similar reaction.[5] The type of item is this section is common to many admission tests and corresponds to the abstract reasoning section in UKCAT for example. The defence for inclusion of such items is that medicine requires pattern recognition skills to enable problem solving and information sifting. Our data suggests that students are not convinced. Predictive validity data confirming that the hypothesis underpinning their inclusion in high selection stakes tests selection is lacking.[20] Of more concern is evidence that this Section is most amenable to improvement by coaching a finding mirrored in the UMAT.[12,21] Recent moves to reduce the weighting afforded to this section may alleviate applicants' concerns.[12] Uptake of preparatory courses was high which is

understandable due to the novelty of HPAT-Ireland. Seventy per cent felt the course positively affected their performance and overall 49% of those who sat the HPAT, regardless of whether they took a course or not, would recommend a preparatory course. This may represent a significant barrier to socially disadvantaged applicants.

This is the first evaluation of students` acceptability of a newly reformed entry and selection mechanism in Ireland and the experience may be of interest elsewhere. Students, regardless of background, endorse the use of school exit examinations but also the use of interviews. Acceptability of specialised admission tests is mixed with students expressing concern about gender bias and the use of certain item types.

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Acknowledgements
All the students who contributed to this work.

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A National Survey of Implementation of Guidelines for Gestational Diabetes Mellitus

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Abstract
In 2010, national guidelines for the management of gestational diabetes mellitus (GDM) were published by the Health Service Executive (HSE). In 2012, a questionnaire was distributed to all maternity units to survey implementation of the guidelines. All units screened women for GDM, but used different screening tests with fifteen units (79%) using the recommended 75g OGTT, three units (16%) using a 100g OGTT and one unit (5%) using a 50g glucose challenge test. Optimal outcomes are best achieved through multidisciplinary diabetes-obstetric care and this was available in nine of the units (47%). The prevalence of GDM varied from 2.2 – 7.4%. Insulin usage varied from 15-56%. Six centres (31%) had not implemented the national guidelines in full because of lack of resources. Despite national endorsement of the guideline, significant variations remain in implementation. This may lead to differences in clinical outcomes depending on where a woman attends for obstetric care.

Introduction
The World Health Organization defines gestational diabetes mellitus (GDM) as any degree of glucose intolerance with onset or first recognition during pregnancy[1]. GDM results in increased maternal and neonatal morbidity[2]. Adverse neonatal outcomes include macrosomia, respiratory distress, hypoglycaemia and jaundice. In the long-term, these infants are at risk of obesity throughout their childhood, and premature death from cardiovascular disease in later life. Adverse maternal outcomes include pre-eclampsia, pregnancy-induced hypertension and

CPD available online at www.imj.ie and questions on page 263.

caesarean section[2]. Women with GDM have an increased lifetime risk of developing type II diabetes mellitus (T2DM) and cardiovascular disease, independent of T2DM[3-5]. GDM, in Ireland, complicates up to one in eight pregnancies[2]. There is a lack of consensus about whether screening for GDM should be offered to all women (universal screening) or only to those with risk factors (selective screening), what screening tests should be used, at what gestation, what results should be considered abnormal and, how GDM should be managed during and after pregnancy[6]. The optimal screening regime remains controversial, with conflicting recommendations among various expert groups. Currently the American Diabetes Association (ADA), the United States Preventative Services Task Force (USPTF), the National Institute for Health and Clinical Excellence (NICE) and the 2010 Irish guidelines recommend selective screening based on risk factors[7-10].

Recent studies, including the landmark Hyperglycaemia and Adverse Pregnancy Outcome (HAPO) study, have highlighted the increased clinical risks associated even with mild maternal hyperglycaemia[11]. The Australasian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS) has shown that screening for and treating mild GDM leads to a reduction in perinatal morbidity[14]. This led to revised international recommendations on screening for GDM[12,13] including new clinical recommendations by the International Association of Diabetes and Pregnancy Study Groups (IADPSG)[15]. These groups recommend screening with a 75g oral glucose tolerance test. Internationally, adoption of the IADPSG criteria has been controversial. Although the ADA endorsed the IADPSG recommended 75g test[7], the American Congress of Obstetricians and Gynecologists recommends a two-step screening process with a 50g glucose challenge test with abnormal results further investigated by a 100g glucose tolerance test[16]. The Society of Obstetricians and Gynecologists of Canada also recommends the same two-step screening process[17]. These groups contend that the more sensitive 75g test, resulting in a larger number diagnoses will have significant impact on the provision and cost of healthcare services while the benefits of the 75g test over the two-step test have not been proven in a randomised control trial.

In Ireland the Health Services Executive (HSE) has established a number of Clinical Care Programmes to provide clinical leadership in the management of the health services. One of the responsibilities of the Programme in Obstetrics and Gynaecology is the development, dissemination and implementation of national guidelines to improve the quality of healthcare by standardising clinical practices. One of the first tasks of the Programme was to establish multidisciplinary Programme Implementation Boards in all the maternity hospitals with responsibility for the implementation of clinical guidelines. The programme, however, does not manage staffing levels or skill mix in the individual maternity units. In August 2010, the HSE published national guidelines for the management of diabetes in pregnancy which included guidelines on screening and management[10,18]. These national guidelines were endorsed by the national professional bodies, including the Institute of Obstetricians and Gynaecologists. The purpose of this national audit was to examine the current implementation of guidelines for GDM in all 19 maternity units funded by the HSE.

Methods

The maternity services in the Republic of Ireland are highly centralised. In 2011, 74373 women were delivered in 20 maternity units with the number of women delivered per unit ranging from 1242 to 9458. Four of the units delivered over 8000 women. Of the 20 units in the country, 19 are funded by the HSE. In July 2012 a standardised questionnaire was distributed to all 19 units by the Programme Manager (BL) of the Obstetrics and Gynaecology Clinical Care Programme to audit the implementation of the national guideline.

Results

All nineteen maternity units responded to the questionnaire within four months. All units offered selective screening for GDM with three units involving the general practitioner in performing the OGTT. The OGTT was performed by a phlebotomist in eleven centres and by a midwife in eight centres. Although all units provided some form of screening, this was not always carried out in line with the guideline recommendations. Fifteen units (79%) used a 75g OGTT, three units (16%) used a 100g OGTT and one unit (5%) used a 50g glucose challenge test and if this was abnormal, a 100g OGTT. The OGTT was performed at routinely 24-26 weeks gestation in three units (16%), at 26-28 weeks in ten units (53%) and at 24-28 weeks in four units (21%). The prevalence of GDM was reported by sixteen units and varied from 2.2-7.4% of all pregnant women. Insulin usage was reported from five units and varied from 15-56% of GDM patients.

Only nine units (47%) had a multidisciplinary clinic providing a comprehensive service for women with GDM. One of the 19 units transferred women to another hospital once GDM was diagnosed. All units weighed women at their first antenatal visit. Ten units (53%) provided a dietetic service, but only five units (26%) had a dedicated midwife as part of the GDM care team. All units provided patient information leaflets. Two units (11%) did not have a policy for the treatment of diabetic ketoacidosis and three units (16%) did not have a policy for the management of maternal hypoglycaemia. Two units (11%) did not have a policy for insulin administration around delivery and five units (26%) did not have a policy for insulin administration to cover steroid administration. All units had policies for admission to the neonatal unit and recommended a postnatal OGTT for the mother. Seven of the units (37%) involved the general practitioner in performing the postnatal OGTT.

The number of ultrasound examinations performed routinely in GDM pregnancies varied from one to four. Twelve units (63%) had on site laboratory facilities for HbA1C measurements. Six of the units (32%) have not fully implemented the 2010 national guidelines and cited lack of resources as a barrier. None of the units have the resources to implement universal screening at present.

Discussion

Despite the endorsement of the new national guidelines on GDM by the country's professional body, the Institute of Obstetricians and Gynaecologists, and by the HSE, there remains significant variation in implementation across the maternity services. While lack of resources is a barrier, incomplete implementation of recommendations may lead to adverse clinical outcomes for the woman and her baby. Failure to screen women adequately for GDM is a lost opportunity to prevent complications for both the baby and the mother. Undiagnosed GDM may result in stillbirth, as well as neonatal complications. There are also long-term complications for the baby throughout childhood, as well as in adult life. Also, an adverse clinical outcome as a consequence of national guidelines not being implemented may result in indirect healthcare costs for the Clinical Indemnity Scheme of the State Claims Agency if a medical negligence claim is made.

In a systematic review and meta-analysis, shoulder dystocia was less common in women treated specifically for GDM[19]. The ACHOIS study also showed a reduction in perinatal morbidity in women with mild GDM who were screened and treated at the appropriate time[14]. The publication of the HAPO study led to a lowering of the threshold of serum glucose levels required for a diagnosis of GDM and the development of the IADPSG criteria[15]. These developments, along with improved adherence to criteria for selective screening has led to an increase in the number of women diagnosed with GDM[2,20]. Previous reviews have highlighted the international variations in screening for GDM[21]. In addition, there is also international evidence of variations in the use of guidelines within maternity services nationally. In the United Kingdom a survey of 256 maternity hospitals was performed in 1996. Of all units, 84% (n=214) responded and 89% of responding units screened for GDM. For the diagnosis of GDM, 79% used a 75g OGTT, 14% used a 50g OGTT, 9% used a 100g

OGTT and 1% used a test meal. Of the 214 units responding, 54% reported a consensus policy about screening while 42% reported that specialists acted independently. Only 58% of units had a written policy on screening for GDM[22].

A Swedish study of 822 women reported 31% of women fulfilled at least one criterion for selective screening according to local guidelines, however, only 9.6% of women were screened in practice[23]. In a sample of 9,842 women in the west of Ireland offered selective screening for GDM, only 55% accepted and attended for screening[24]. Distance from the maternity hospital had a negative impact on screening uptake as did socioeconomic status. Thus, variations in patient population further compound variations in hospital practice. The usefulness of selective screening has also been examined through the ATLANTIC DIP (Diabetes In Pregnancy) collaboration by comparing the sensitivity and specificity of known selective screening strategies to a population previously screened by universal screening. When applying NICE guidelines, 54% of women (n=5,500) diagnosed with GDM through universal screening had at least one risk factor for GDM and would have been recommended for selective screening, but 20% had no risk factors and would have gone undiagnosed. When applying Irish guidelines, 58% would have been recommended for selective screening but 16% had no risk factors and would have remained undiagnosed. When applying ADA guidelines, 76% would have been recommended for selective screening but 5% would have remained undiagnosed[25].

Using BMI > 29.9 kg/m^2 as a criterion for screening has a specificity of 81% with a sensitivity of only 48% for the diagnosis of GDM. Reducing screening criteria to include those with a BMI > 24.9 kg/m^2 increases the sensitivity to 80% but reduces the specificity to 44%. Women with no risk factors who were diagnosed with GDM through universal screening had more adverse pregnancy outcomes than those with a normal OGTT[25]. Applying universal screening to the Irish population using IADPSG criteria estimates a prevalence of GDM of about 12%[2]. The prevalence of GDM reported from Irish maternity units in this survey varies from 2.2–7.4% suggesting that 5-10% of pregnant women potentially remain undiagnosed.

In summary, GDM is a common pregnancy complication in Ireland. Guidelines are in place for screening, and treatment is available at a low cost, requiring only advice about diet and exercise in approximately 70% of cases. There is evidence that treatment is effective in reducing perinatal morbidity. It has been argued that the current guidelines are too broad in terms of the criteria used for selective screening , particularly using age over 40 years and BMI over 29.9 kg/m^2.[2,25] Cases of GDM are potentially being missed resulting in a lost opportunity to reduce adverse pregnancy outcomes. If such guidelines are also incompletely implemented then we may be increasing adverse clinical events and be missing opportunities where the health of both the woman and her baby can be improved. Although lack of resources is a barrier to implementation, we may need to review our process of care and deliver revised guidelines within finite available resources because maternity units may not be in a position to increase staffing levels given the current financial challenges in the health services.

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Primary Care in Nursing Homes Revisited: Survey of the Experiences of Primary Care Physicians

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Abstract
The Irish Health Information and Quality Authority (HIQA) published National Quality Standards for Residential Care Settings for Older People in 2009. We reported on experiences of general practitioners (GPs) in Dublin caring for nursing home patients (NHPs) in 2006. We revisit these experiences following publication of HIQA's standards. 400 GPs received an anonymous postal survey. Of 204 respondents, 145 (71%) felt NHPs required more contact time and 124 (61%) reported more complex consultations compared to other patients. Only 131 (64%) felt adequately trained in gerontology. 143 (70%) reported access to specialist advice, but only 6 (3%) reported a change in this following HIQA standards. 65 (32%) had witnessed substandard care in a NH, of which 16 (25%) made no report, similar figures to 2006. There remains similar levels of concern regarding patient complexity, substandard care, access to specialist support and training in the care of NHPs. Many GPs expressed uncertainty regarding their role in implementing HIQA standards.

Introduction

Older adults within nursing homes (NHs) and residential care settings represent a vulnerable population, with over 70.3% classified as high dependency patients[1]. Presently, 31,000 nursing home patients (NHPs) reside in Ireland[2]. With the population over 65 years expected to double over thirty years and that over 85 years expected to rise by 300-400%, this figure will increase significantly[1]. The general practitioner (GP) remains the primary care-giver for most NHPs in Ireland. As GPs internationally negotiate increased reimbursement for NHPs, capitation fees that Irish GPs receive have halved in recent years[3], though previous studies demonstrate correlation between financial incentive and quality of care[4-7]. In 2006 this group surveyed experiences of GPs in Dublin caring for NHPs[8], results implying that over 33% felt inadequately trained to deal with the complexities of NHPs while 37% reported witnessing substandard care in a NH. In 2006, the Leas Cross Report, investigating deaths in a County Dublin NH, highlighted failures in preventing substandard care[9]. Partly in response to this, the Health Information and Quality Authority (HIQA) in 2009 published the National Quality Standards for Residential Care Settings for Older People in Ireland, pertaining to issues including health care, social needs and patient protection[10]. This study re-examines GPs experiences in caring for NHPs in the post-HIQA era, expanding our survey nationwide.

Methods

Anonymous postal surveys of twenty tick-box questions with free-text comment box were distributed with free-post return envelopes to 400 GPs nationwide, randomly selected by county from the National Irish Medical Directory. Replies were collected from February to April 2011. Questions were designed to collect data relating to practice demographics, personal experience with NHPs and support available, practice services to NHs, encounters with substandard care, and the impact of HIQA standards and decreased capitation funding. Quantitative data was collated in excel spreadsheet, tabulated and directly compared with data from 2006. Subgroup analysis was performed based on number of NHPs cared for, considered an indicator of experience and workload. Qualitative data analysis was achieved using inductive content analysis informed by the free-text box, with coding sorts allowing identification of major themes. Ethical approval was not sought as data collection was anonymised, retrospective and did not include patient data.

Results

Of 400 GPs contacted, 204 (51%) responded within the designated period. 35% commented within the free-text box.

Practice Demographics

22% of respondents worked in city, 43% town and 29% rural practices. 23.5% worked in singled-handed, 23.5% partnership, and 24% multiple-GP practices. 56.9% of respondents cared for less than 20 NHPs, 21.5% for more than 30 NHPs and 8.8% for more than 50 NHPs.

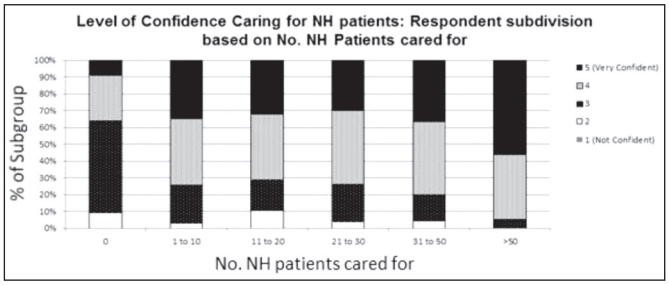

Figure 1 GP Self-rated Confidence Levels in dealing with NHPs

% subgroup analysis (n=204) based on number of NHPs cared for and self-rated GP Confidence Level in dealing with NHPs. Confidence Level rated on a 5-point scale (1 = Not Confident, 5 = Very Confident).

Personal Experience/Support Available

87% of respondents had more than ten years' experience as a GP, but only 11% held a post-graduate qualification in gerontology. 64% felt adequately trained to care for NHPs, with 27% feeling inadequately trained. When asked to rate their confidence level in caring for NHPs on a five-point scale (five representing very confident), 66% rated themselves four or higher (Figure 1). Confidence levels were higher in those caring for more NHPs. Regarding end-of-life decisions such as withdrawal of treatment, transfer to hospital and resuscitation status, over 70% of respondents felt confident. Over 70% of respondents reported access to advice from Palliative Care, Gerontology and Psychiatry of Later Life. Only 3% reported any change in this since publication of HIQA standards.

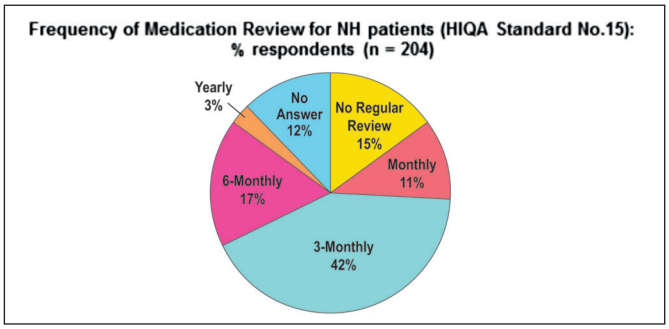

Figure 2 GP Services to NHs: Frequency of Medication Review (HIQA Standard No. 15)

% respondents (n=204) that report completing regular medication review for NHPs at monthly, 3-monthly, 6-monthly and yearly intervals.

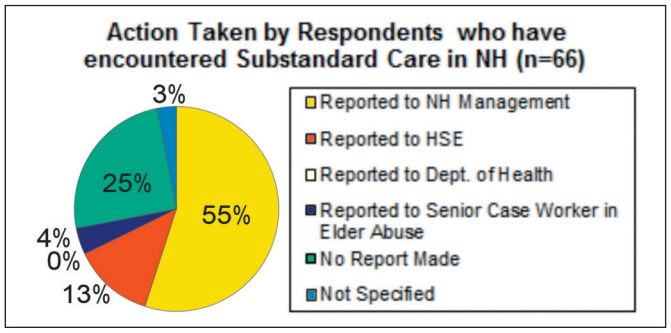

Figure 3 Substandard Care within NHs

Actions taken by respondents who had witnessed substandard care in a NH (n=66)

GP Services to the NHs

Compared to elderly patients living in the community, 71% of GPs reported NHP consultations more time-consuming and 61% reported them more complex. Regarding recent reductions in capitation fees paid for NHPs, 60% of GPs predicted a resultant decreased level of service to their NHPs, with this figure rising to 89% for those caring for over 50 NHPs. 27% felt service level would be unaffected. 53% of respondents were adhering to HIQA Standard No. 15, which recommends three-monthly medication review for NHPs (Figure 2)[10]. 20% reported six-monthly or yearly review. 15% made no regular medication review, though this figure decreased with increasing number of NHPs cared for. 88% of respondents had received no invitation to partake in HIQA inspections of NHs within their practice.

Substandard Care

32% of respondents had witnessed substandard care in a NH, increasing to greater than 50% among those caring for above 21 NHPs. Of 131 incidents of substandard care witnessed, 48 related to inadequate assessments by nursing staff, 33 to inappropriate physical environment, 22 to inappropriate use of sedatives, 17 to inadequate maintenance of hygiene and 6 to abuse (Figure 3). Of those witnessing substandard care, 55% reported it to NH management, 13% to the Health Services Executive (HSE), 4% to a Senior Case Worker in Elder Abuse. 25% of those witnessing substandard care in a NH made no report. 33% of respondents reported pressure from NH management to make inappropriate transfers to hospital and 35% to prescribe sedative medication.

Qualitative Data Analysis

Of 204 respondents, 72 (35%) made a comment in the free-text box. Over one third of comments referred to decreases in capitation funding. One fifth addressed increased administrative burden placed on GPs since the advent of HIQA standards. Several comments highlighted confusion amongst GPs regarding their role in implementing HIQA standards, suggesting no implications exist for practices that fail to comply with standards, while others were unaware of ICGP (Irish College of General Practitioners) involvement in the development of HIQA standards.

Discussion

NHPs represent an increasing patient demographic with high dependency levels, with primary care usually provided by GPs[1,2]. Our group previously surveyed GPs caring for NHPs prior to publication of the Leas Cross Report and HIQA national standards[8,10]. The current study surveys GPs 2 years post-HIQA standards. Response rate was 51% (204 respondents), making this the largest study addressing the issue in the UK and Ireland. Number of NHPs cared for by the respondent was considered indicative of the influence of experience and workload on responses. 27% of GPs felt inadequately trained to care for NHPs, similar to 2006. This decreases with increased number of NHPs cared for, suggesting experience improves confidence levels. This echoes a 2008 US survey of primary care trainees which found the 'level of training in gerontology' a frequently cited 'potential obstacle' to caring for NHPs[11]. Only 11% of our respondents held a post-graduate qualification in gerontology, as recommended in the Leas Cross Report[9]. Since completion of our study, however, the ICGP has launched an e-learning certificate course in gerontology and in 2013 held a national conference addressing care of elderly patients in residential care settings, demonstrating an awareness of its' members desire for increased training. As these programmes are developed, they will likely need practical support from appointed community geriatricians to produce real impact.

While 70% of GPs surveyed reported access to specialist advice was available, only 3% reported any change since introduction of HIQA standards. Qualitative data suggests that where specialist advice is available, long waiting lists can negate benefit. The Leas Cross Report highlighted the need for specialist input, as does HIQA Standard No. 13[9,10]. In 2000, a joint working party report endorsed by the British Geriatrics Society, the Royal College of Physicians and the Royal College of Nursing suggested that accessible specialist support was needed to optimise care of NHPs[12]. Survey of geriatricians and Primary Care Trust members nine years later, however, highlighted ongoing deficiencies[13], emphasising that the issue is extensive and satisfactory address will require changes in policy and resource allocation. Despite increases in geriatric, psychiatry of later life and palliative care posts in recent years, the aging profile of our population means increasing demand for service provision. Also, much of this resource has been targeted at acute hospital admission initiatives and addressing historical under-resourcing of hospital services. Specific appointments with responsibility for development of NH medicine, standards and education may be needed to meaningfully improve access to specialist advice. Previous studies highlight increased face-to-face, telephone and out-of-hours contacts associated with NHPs compared with other practice patients[3,14,15]. In our 2006 survey, GPs highlighted workload as a deterrent to taking on new NHPs. The current study demonstrates similar opinions, with 71% finding NHP consultations more time-consuming and 61% finding them more complex. In 2006, financial concerns relating to caring for NHPs was not highlighted as a prominent issue for Irish GPs in contrast to some UK studies, likely related to the over-70s capitation fee introduced in Ireland in 2002[8]. However, capitation fees have been halved recently, reflected in responses in the current study. Correlation between financial incentive and quality of care has been demonstrated[4-7]. Our results echo this correlation, with 60% of GPs anticipating decreased service levels to NHPs following reduction in capitation fees.

This study found a modest decrease in the number of cases of substandard care encountered in NHs by GPs compared to those surveyed in 2006, falling to 32% of respondents from 37% in 2006, possibly reflecting a positive impact of HIQA standards. Alternatively, qualitative data suggested hesitancy to acknowledge substandard care and invite further increase in regulations and a "culture of blame". Notably, despite the apparent decrease in substandard care witnessed, 32% remains a high rate, thus continued governance of NH care is needed. Similar to 2006, 25% of those respondents who witnessed substandard care in a NH made no report of it. Data from the World Health Organisation (WHO) suggest under-reporting of elder abuse by up to 80%, and challenges remain in encouraging those who witness it to report it[16,17]. 88% of respondents reported no invitation to partake in HIQA inspections of NHs serviced by them, a surprising figure given the prominent role of the GP in healthcare of NHP and their unique perspective to observe and comment on care given to elderly residents in NHs. HIQA Standard No. 15 recommends three-monthly medication review for NHPs. Only 53% of respondents in our study were adhering to this standard (Figure 2). In the comment box, many respondents highlighted the absence of implications should the GP fail to adhere to standards, felt by some to be "unattainable". Qualitative data suggest

confusion regarding the GP's role in implementing HIQA standards. Though the ICGP (an organisation to which 85 to 90% of GPs nationwide belong) report involvement in the development of the standards, free-text comments offered by respondents reveal lack of awareness of this involvement amongst some of its members.

This study may be limited by significant response bias, with GPs with greater involvement with NHs more likely to respond, particularly if dissatisfied with their experiences. However, the prevalence of concern regarding issues of patient complexity and access to specialist support and training in the care of NHPs is similar to 2006. There remains a high reported incidence of substandard care in NHs and a suggestion that GPs feel HIQA is failing to engage with them adequately in implementing their standards. This is possibly due to the survey being completed when implementation of HIQA standards remained in its infancy, thus this study serves as an early interim review of GP opinion on NHP care post-HIQA standards. We intend to monitor this going forward.

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Staff Attitudes to an Ultrasound-Guided Peripheral Nerve Block Room for Orthopaedic Patients

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Abstract
Ultrasound-guided peripheral nerve blocks have well recognised benefits in orthopaedic patients. Some hospitals, to maximise these benefits, establish dedicated "block rooms" to deliver this service. Orthopaedic surgery makes up a large proportion of our hospitals work load, and many of these patients would benefit from ultrasound-guided peripheral nerve blocks. We analysed the attitudes of key staff in our hospital towards the establishment of a block room. Sixty questionnaires were distributed and 47 (78%) were completed. Orthopaedic surgeons (n=6) were concerned ultrasound-guided peripheral nerve blocks would delay theatre lists (83%), and cause patients pain (67%) and increased anxiety (67%). Anaesthetists (n=10) and Nurses (n=30) were concerned there was insufficient experience in their departments to deliver this service (80% and 77%, respectively). However, 91% of all staff believed funding should be available for a block room. Our survey has identified areas of concern, and deficiencies that we must address before proceeding with the development of such a service.

Introduction

Peripheral nerve blocks (PNB) involve injecting local anaesthetic around a nerve to provide anaesthesia or analgesia to a particular region of the body. To accurately target the nerve, a nerve stimulator generating electrical pulses has been used to indicate the needle tips proximity to the target nerve. Once this is confirmed the local anaesthetic may be injected. In recent times, ultrasound has become a popular way of localising the nerve. Serious adverse events include peripheral neuropathy, seizures, respiratory arrest, and cardiac arrest. Fortunately, the incidence of these complications are rare (0-10 incidents per 10,000 cases).[1] When compared with general anaesthesia (GA), PNB have been associated with less postoperative pain and nausea, better patient acceptance, and earlier ambulation and hospital discharge for many different orthopaedic operations.[2-4] PNB may also be combined with GA or neuraxial anaesthesia for particular orthopaedic operations to enhance the patients post-operative recovery.[5-7] Obviously, any intervention that has such a positive influence on a patients post-operative recovery should have significant economic benefits for the hospital and society in general. This has been demonstrated in a number of studies.[8-10] However, the method of administering the PNB, and the equipment and environment used, must be time and cost-efficient to realise these benefits.

The establishment of a "block room", a dedicated space for the provision of PNB, stocked with the required equipment, and staffed by a trained operator, has been reported in numerous studies in orthopaedic theatres.[11-14] In general, they report improved theatre efficiency. Over the past 5-10 years, ultrasound guidance is used more frequently for peripheral nerve blocks, in preference over nerve stimulation techniques. While there is no strong evidence to suggest it is a safer approach, it has multiple advantages over nerve stimulation, including direct visualisation of the target structures and identifying anatomical variants, reducing local anaesthetic volume, and achieving less painful, better quality blocks.[15] Considering this evidence, a block room should favour ultrasound-guided PNB (US-PNB) to maximise productivity.

Our institution is a 339 bed district hospital. A large proportion of the surgical operations are orthopaedic with approximately 1,500 cases (trauma and elective) performed annually. There is no significant history of US-PNB for orthopaedic patients in the hospital. We surveyed the relevant staff members on knowledge of US-PNB for orthopaedic operations, and their attitudes towards potential advantages and disadvantages of introducing a block room to our hospital. The successful introduction of any new service or technique to a hospital is heavily dependent on the support of the majority of the relevant staff. We planned to assess the level of support for such a service, and to identify issues that may obstruct the establishment of an efficient block room.

Methods

Local Research Ethics Committee approval was granted for our survey. We devised a two page questionnaire. It was anonymous, but identified the staff members occupation, and career grade. Staff were asked if they ever worked in a hospital that offered regular US-PNB to orthopaedic patients, and to rate their knowledge of US-PNB (none, basic, moderate, good, or expert) (Table 1). Staff were then asked to answer (Yes/No/Don' Know) a number of hypothetical questions related to operating a block room for orthopaedic patients in our hospital (Figure 1 and Figure 2). They were told that it was not a test of knowledge, but rather an assessment of their own personal opinions. What did they perceive as the advantages or disadvantages of introducing this service to our hospital? Finally, we asked if they believed the hospital should invest in a block room. Sixty questionnaires were distributed to the relevant departments, and the completed copies were gathered after one week.

Table 1 Staff members occupation, experience and knowledge of ultrasound-guided peripheral nerve blocks, and willingness to fund service. Values represented as number (percentage)

Staff	Number	Previous Experience	Level of Knowledge (Good/Expert)	Yes to Funding US-PNB Room*
Anaesthetists	10	7 (70)	3 (30)	9 (90)
Nurses	30	7 (23)	1 (3)	29 (97)
Orthopaedic Surgeons	6	4 (67)	3 (50)	4 (67)
Physiotherapist	1	0 (0)	0 (0)	1 (100)

* US-PNB; ultrasound-guided peripheral nerve block

Results

Of the 60 questionnaires distributed, 47 (78%) were completed and returned. The staff members represented (n, % total group) were Anaesthetists (AS) (10, 21%), Nurses (NS) (Theatre, Orthopaedic Ward, and Day Ward Nurses) (30, 64%), Orthopaedic Surgeons (OS) (6, 13%), and a Physiotherapist (1, 2%). The percentage of staff from each group that answered yes to a question are represented in Figure 1 (advantages) and Figure 2 (disadvantages).

When considering the advantages of a block room, all groups were in agreement that they expected "faster recovery", "less PONV", and "less delirium" post-operatively. However, the OS disagreed with the AS and NS who suggested that a block room would lead to "increased patient satisfaction", and allow "faster mobilisation", "decreased length of stay (LOS)", and "cost savings for the hospital". When asked about disadvantages or obstacles associated with a block room, OS were most concerned about "delays to orthopaedic list" (83%), and that it was a "painful procedure" (67%) that could cause "high patient anxiety" (67%). AS and NS were most concerned about the "inexperienced staff" in their individual Departments, 80% and 77%, respectively. Ninety-one percent of all staff believed funding should be available for a block room.

In a subgroup analysis, the decision makers in the respective groups (Consultant Orthopaedic Surgeons (3), Consultant Anaesthetists (5), and Clinical Nurse Managers (CNM) (3)), were separated out from the general staff, and their answers were reassessed. We found that the CNM opinions correlated with the general NS on all questions. The CNM were more experienced and knowledgeable (Good/Expert) about the use of US-PNB when compared with the general NS (67% and 33% vs. 19% and 0%, respectively). Consultant OS opinions were also in line with the opinions of the Junior OS on most questions except for the question of funding a block room. Only one Consultant felt this would be appropriate (33%) compared to 100% of the Junior OS. Again, the Consultant OS had more knowledge (Good/Expert) of US-PNB when compared to the Junior OS (100% vs. 0%). In contrast, the Consultant AS agreed with the Junior AS on only two factors (100% agreement on "faster recovery" and "better pain control" post-operatively). On every other question, the Consultants were more negative about the potential advantages/disadvantages of an US-PNB service for orthopaedic patients. All of the Consultant AS (100%) believed "inexperienced anaesthetic staff" would complicate the establishment of a block room. Only 40% of Consultant AS had previous experience of US-PNB in another hospital versus 100% of Junior AS.

Discussion

We feel our survey has identified a number of areas that should be addressed before proceeding with further plans. The OS sited "delays to orthopaedic list" as the major disadvantage to setting up a block room. A survey of Canadian orthopaedic surgeons also cited "delays in operating rooms" and "unpredictable success" as the two main reasons they would not favour PNB.[16] An efficient service should not delay lists, and may indeed improve list flow.[11-13] However, OS perception is often more relevant than fact, and a subsequent analysis showed a surgeons personal preference for a nerve block predicted their preference for their patients anaesthetic.[17] This is important, because the surgeon can influence the patients choice of anaesthetic. In the Canadian survey, 48% of surgeons directed the patients' choice of anaesthetic pre-operatively. In our study, the OS also raised concerns that it was a "painful procedure" and may cause "high patient anxiety". Patients' major concerns in relation to a PNB relate to a fear of hearing or seeing the operation. However, if they have a previous experience of a PNB, they are 3 times more likely to opt for a PNB.[18] In order to establish a successful block room, the concerns of OS would have to be discussed. The OS have a great influence on the patients' choices and confidence in the anaesthetic technique. The best approach to dealing with this would be a collaborative approach (AS, OS, and NS) when drafting protocols for the room, so that all parties were comfortable with the service plan.

The AS were the only group significantly concerned with "high block failure rates" as an obstacle to running an efficient service (50%). However, this is a very important element of a successful block room, and high success rates are essential. Generally, when performed by a trained operator, the incidence of US-PNB failure is low, <5% for upper extremity PNB, and 3-10% for lower extremity PNB.[19] However, even lower failure rates are probably required to realise major economic benefits. The advantages of PNB techniques in orthopaedic practice are well documented. Reduced post-operative nausea and vomiting, reduced post-operative pain, and earlier ambulation are commonly reported.

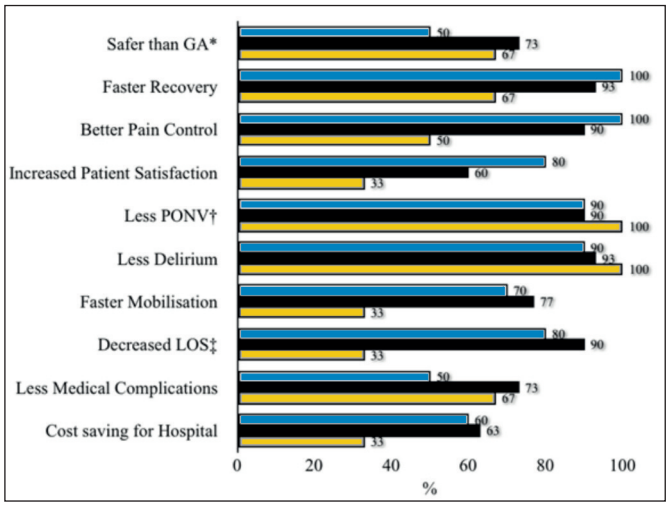

Figure 1 Percentage of staff who answered yes or agreed with the potential advantage of providing an ultrasound-guided peripheral nerve block room to orthopaedic patients. Staff members represented as Anaesthetists (■), Nurses (■), and Orthopaedic Surgeons (■). Percentage represented in figures to the right of the corresponding bar.

*GA; general anaesthesia
†PONV; post-operative nausea and vomiting
‡LOS; length of stay in hospital.

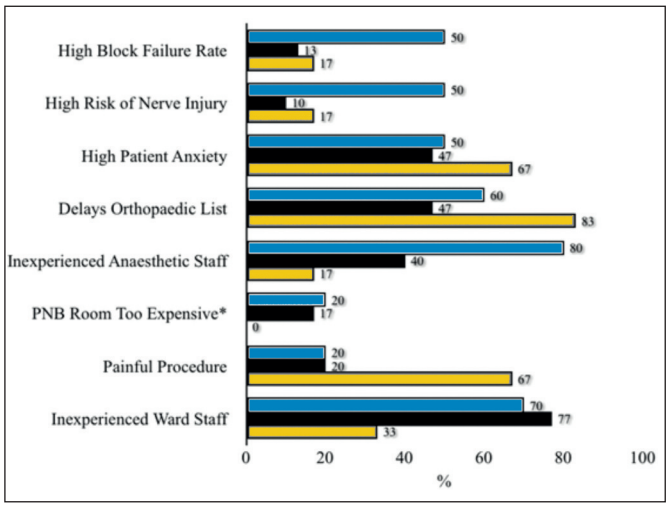

Figure 2 Percentage of staff who answered yes or agreed with the potential disadvantage or obstacle to providing an ultrasound-guided peripheral nerve block room to orthopaedic patients. Staff members represented as Anaesthetists (■), Nurses (■), and Orthopaedic Surgeons (■). Percentage represented in figures to the right of the corresponding bar

*PNB; peripheral nerve block

However, it is not always so straightforward to realise the economic benefits in routine clinical practice.[20,21] A block room facilitates a more efficient service, allowing PNB to proceed while the theatre is occupied with another patient. It also provides an optimal environment for providing PNB (with all the required equipment in one location), and a good teaching environment for junior staff. The investment required to establish a modern block room is not insignificant. The largest initial expense is the equipment, in particular the ultrasound machine. However, more significant on-going expenses include the use of valuable theatre space, and staffing the room with an experienced regional anaesthetist. It is, therefore, important to address any obstacles to an efficient block room before allocating increasingly scarce resources.

Staff education should play a major role in facilitating further progress. Both AS and NS groups expressed concern with "inexperienced staff" in their respective departments. They are justified in their concern. The management of these patients can be very different.[22] Confidence in caring for these patients, and identifying possible complications, is crucial. The subgroup analysis was important, because the introduction of a new practice is generally directed by the most senior staff members. This demonstrated a more negative perspective on a block room amongst the Consultant AS when compared with their junior colleagues. This may be explained by their relative inexperience in US-PNB (40%). In contrast, all of the Junior AS (100%) had previous exposure due to their regular rotation through other institutions. Despite the potential obstacles, 91% of all staff surveyed felt that a block room should be funded by the hospital administration.

Our study is limited by a small sample size. However, a good response rate from the key staff members provides us with very relevant data. Our results are unlikely to reflect opinions in other institutions, but repeating the same process could provide a Department with valuable information. Our survey has identified a number of issues that, through good inter-disciplinary communication and educational programs, are not insurmountable. US-PNB in orthopaedic patients is a rapidly growing area, and at some stage patients may expect to be offered this routinely. Establishing a block room maximises the efficiency of this service, and provides a safe environment for practice and further education of trainees.

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Clinical Pregnancy Following Pre-Implantation Genetic Diagnosis for Cystic Fibrosis

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Abstract
Pre-implantation genetic diagnosis (PGD) is an established alternative to prenatal testing for couples at risk of transmitting genetic disorders such as cystic fibrosis (CF).PGD screens pre-implantation embryos, allowing the safe transfer of those identified as unaffected. Awareness of CF carrier status in Ireland is increasing following the introduction of neonatal screening in 2011. PGD is the most acceptable reproductive strategy for many at risk Irish couples but until now the treatment necessitated travelling abroad. In 2012, the Irish Medicines Board licenced two Irish fertility clinics to carry out embryo biopsy for PGD. This is the first reported clinical pregnancy following PGD carried out in Ireland.

Introduction

Cystic Fibrosis (CF) is an autosomal recessive condition caused by mutations of the cystic fibrosis transmembrane conductance regulator (CFTR) gene. Ireland has the highest incidence of CF in the world and 1 in 19 of the population is a carrier. The birth of an index case has always identified couples at risk (where both parents are carriers) but awareness of CF risk is now rising due to the introduction of neonatal CF screening in July 2011 (identifying both disease and carrier status). Couples at risk must make difficult reproductive choices. Pre-implantation genetic diagnosis (PGD) may be the most acceptable strategy for many Irish couples but until now it has been necessary to travel abroad for the treatment.

Case Report

A couple was referred to Cork Fertility Centre (CFC) for assessment with regard to PGD. The male partner, aged 30 years, was affected by CF (homozygous for f508 mutation); the female partner was a known CF carrier (G551D mutation). Both partners underwent routine fertility assessment. Semen analysis showed azoospermia. Normal levels of FSH, AMH and a normal antral follicle count indicated satisfactory ovarian reserve. Testicular sperm extraction (TESE) was carried out at CFC confirming the presence of motile sperms which were cryopreserved. Blood samples from both partners were sent to Reprogenetics (Oxford, U.K.) for preliminary genetic analysis. Polymerase chain reaction (PCR) was used to amplify a fragment of DNA containing the CFTR gene. The presence or absence of the mutation was then determined using mini-sequencing. Additionally, polymorphisms (highly variable pieces of DNA situated in close proximity to the CFTR gene), were amplified and analysed. The risk of a mis-diagnosis from this technique is negligible. However current technology allows for an error rate of 1 to 2%.[1]

The female partner underwent a routine IVF cycle. Thirty eggs were collected and inseminated by intracytoplasmic sperm injection (ICSI) using the cryopreserved sperms. Fifteen embryos were biopsied on day 3 following egg collection; a single blastomere was removed from each and sent to Reprogenetics for genetic analysis while the embryos remained in culture. Five days following egg collection the genetic analysis results identified 5 unaffected embryos. A fresh embryo transfer was not carried out because of concerns about the possibility of ovarian hyperstimulation syndrome and the embryos were cryopreserved using a closed vitrification system. A frozen embryo transfer cycle was carried out 8 weeks after the fresh cycle, with a single embryo transferred. Ultrasonography confirmed a viable singleton intrauterine pregnancy.

Discussion

PGD was first described in the medical literature in 1990.[2,3] The European Society of Human Reproduction and Embryology (ESHRE) PGD Consortium 2007 reported that 5,887cycles of PGD had been performed in 57 European centres, resulting in

1,206 live births.[4] This case, the first reported clinical pregnancy following PGD carried out in Ireland, is an important milestone. Its outcome depended on the reliability of several technical advances- ICSI/TESE, blastocyst culture, embryo biopsy and embryo vitrification. Although cryopreservation, in this case, had not been intended at the outset it will be a necessary part of all PGD cases in the future as biopsy moves from day 3 to day 5 (the day 5 embryo is more robust and several cells can be removed, increasing the certainty of genetic diagnosis).[5] The challenge involved here was greater because only 50% of embryos were likely to be unaffected by CF (compared to 75% when both partners are carriers for the condition). Increasing awareness of genetic risk is inevitable and where Irish couples are burdened with difficult reproductive choices, the option of PGD in Ireland is a welcome development.

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A 76 Year Old Female Diagnosed with Cystic Fibrosis

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Abstract
The diagnosis of Cystic Fibrosis (CF) requires a high clinical suspicion in patients presenting at all ages. Early recognition permits referral to a specialist centre and may reduce the morbidity and mortality associated with CF. We report the case of the oldest patient in Ireland diagnosed with CF at 76 years of age and highlight the clinical features of her presentation.

Introduction

Cystic Fibrosis is the most common fatally inherited genetic condition in Ireland with a carrier frequency of 1:18 and incidence of 1:1353[1], the highest worldwide. The pathogenic manifestations of CF are due to reduced CFTR-related chloride secretion[2]. In the lungs, this leads to airway surface liquid depletion, reduced mucociliary clearance, and retention of secretions, thus promoting recurrent infection and chronic inflammation[3]. The majority of patients with CF are detected in infancy (particularly following the introduction of newborn screening), however due to the increased recognition of milder phenotypes of CF, more patients are being diagnosed in adulthood.

Case Report

A 76-year-old woman was referred for assessment of possible bronchiectasis. She reported a history of recurrent childhood pneumonia, asthma and had a remote smoking history. She had a daily cough productive of yellow sputum and frequent hospital admissions with lower respiratory tract infections. On examination, her body mass index was 28kg/m^2, and auscultation of her chest was clear. Pulmonary function testing demonstrated normal spirometry values with an obstructive ratio: FVC 2.29 (106%), FEV1 1.59L (93%), FEV1/FVC 69%. An initial chest radiograph was reported as normal. High Resolution CT thorax demonstrated right middle lobe bronchiectasis (Figure 1) with otherwise normal lung parenchyma. Bronchioalveolar lavage cultured Stenotrophomonas maltophilia, Haemophilus influenza and Staphylococcus aureus. Repeat sputum cultures isolated a non-tuberculous mycobacterial (NTM) species, Mycobacterium chelonae. Sequential sweat chloride testing was positive with values of 62mmol/L and 63mmol/L (>60mmol/L; CF highly likely). Faecal elastase testing indicated pancreatic sufficiency. CFTR genotyping confirmed F508/n. Based on the clinical findings and investigations, a diagnosis of Cystic Fibrosis was firmly established[4]. At 76 years of age, this patient represents the oldest ever first presentation of CF in Ireland.

Figure 1

High Resolution CT Thorax demonstrating bronchiectasis of the Right Middle Lobe

Discussion

The natural history of CF has evolved considerably in recent decades; improvements in airway clearance, nutrition and antibiotic therapy have led to significant increases in life expectancy[5]. Additionally, effective nebulised antibiotic and mucolytic therapies mean that the predicted median life expectancy of someone born with CF today is greater than 50 years of age[6]. CF remains a clinical diagnosis based on the presence of an established disease phenotype in one or more organ systems, evidence of CFTR dysfunction and/or genetic confirmation of CFTR mutations, and an elevated sweat chloride >60mmol/L. Sweat chloride testing remains the gold standard for the diagnosis of CF worldwide[4]. Diagnosis of CF in adult patients was first reported in the medical literature in the 1970s[7]. US and UK registry data reveal the oldest patients with CF in these countries to be 82 and 79 years respectively; the oldest patient previously recorded in the CF Registry of Ireland was 61 years old[8]. A recent paper identified low risk CFTR mutation (e.g. R117H), female sex, pancreatic sufficiency and the presence of NTM in sputum as more prevalent in those diagnosed with CF in adulthood (>40 years)[9]. CF patients diagnosed in adulthood had similar lung function decline, and died from similar causes, compared to those diagnosed in childhood. Importantly, this highlights the morbidity of CF lung disease in this group and that it does not run a benign course.

Our patient had many of the characteristics identified by this

study; female sex, pancreatic sufficiency, NTM-culture positive sputum and evidence of CFTR dysfunction. Her preserved lung function highlights the potential role of gene modifiers[10]. At 76 years of age, she is the oldest patient ever to be diagnosed with CF in the Republic of Ireland and she remains stable at 78 years of age. The diagnosis of CF in this patient permits her care to be coordinated by our adult CF centre, including direct access to the multidisciplinary healthcare structure. She attends for three-monthly outpatient follow up, receives earlier and more aggressive antibiotic therapy for pulmonary exacerbations, and genetic counselling has been provided to her family. Our case report highlights that in those with appropriate clinical findings, investigations to exclude CF should be instigated at any age[1]. The presence of typical CF or NTM pathogens in sputum should further alert the clinician to possible underlying CF. Adults with CF are a rapidly ageing cohort, and as illustrated by our case, some with milder phenotypes can expect to live a normal lifespan.

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Terminal Ileum and Total Colonic Duplication Associated with a Rectovestibular Fistula in a Child

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Abstract
The presence of terminal ileum and complete colonic duplication associated with a rectovestibular fistula, caecal diverticulum and multiple appendixes in a child presents an extremely rare diagnostic and management conundrum. We report our surgical approach to successfully correcting this anomaly.

Introduction

Complete duplication of the colon is extremely rare. Herein, we discuss one such case highlighting the diagnostic difficulties and the pros and cons of different surgical options.

Case Report

A 7 day old female of West African origin was referred with a history of passing stools via her vagina. Physical examination revealed a normal anus and a rectovestibular fistula. A rectal duplication was suspected. Abdominal ultrasonography and a micturating cystourethrogram were normal. A contrast enema and subsequent fistulogram were non-diagnostic for the nature and extent of her duplication. A loop sigmoidostomy was required at 10 months old due to an obstructing distal fecaloma. After the occurrence of a stoma prolapse, it was observed that both proximal and distal limbs of the sigmoidostomy had dual lumens. Contrast was then instilled through both distal lumens showing duplicated distal colons (Figure 1). Magnetic resonance imaging confirmed a complete colonic duplication (Figure 2) but the precise anatomy of the caecum and terminal ileum could not be outlined.

At laparotomy, the anterior colon terminated as a rectovestibular fistula and proximally had a caecal diverticulum and 5 appendixes. The posterior colon terminated as the normal anus. The terminal ileum was duplicated, each entering a duplicated caecum. After taking down the sigmoidostomy, a mucosectomy of the distal anterior rectum was performed as far down to the vestibular fistula as possible; the seromuscular layer of the distal rectum below the peritoneal reflection was then closed leaving a small rectal stump. Because both colons shared a common wall (Fgure 2) and blood supply, a linear stapler was used to divide the common wall thus forming a stapled anastomosis single lumen colon. The duplicated terminal ileum, caecal diverticulum and all appendixes were excised and an ileoileostomy was created between the distal ileum and the remaining terminal ileum that entered the caecum of the posterior colon. Finally, a proximal end ileostomy was fashioned. After ileostomy reversal she initially

Figure 1

A distal colostogram with contrast instilled via the duplicated lumens showing one colon terminating anteriorly and the other posteriorly

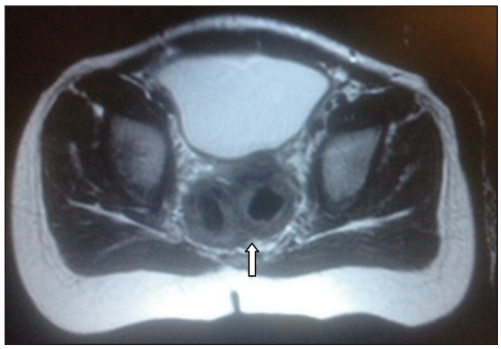

Figure 2

Transverse section magnetic resonance image of pelvis showing the common wall (arrow) between both duplicated colons

reported mucus discharging per vagina but this subsided. Apart from constipation and an episode of bowel obstruction requiring adhesiolysis she remains well at 8 years old.

Discussion

The features described in this case probably form part of the spectrum of caudal duplication syndrome, whereby structures derived from the cloaca and notochord are duplicated. Duplications of the external genitalia, genitourinary system, hindgut and vertebra have all been infrequently reported[1]. One theory for the embryological cause is a defect in the caudal cell mass during the first trimester[2-4]. Classification systems proposed for these hindgut duplications depend on the presence or absence of a communication between both colons, a perineal fistula, or a rectovestibular and rectourethral fistula in females and males respectively[1,2]. A Contrast enema and a fistulogram performed concomitantly, preferably with contrast media of differing densities, should delineate both colons[5-7]. It is often difficult to identify the proximal extent of the duplication[4]; however, upper gastrointestinal contrast follow-through studies have been reported to facilitate the diagnosis[5]. Depending on the features present, surgical options for managing hindgut duplications include a total colectomy of both colons[3]. Proponents of this approach reference the reported malignancy risk[3,8] and risk of heterotopic mucosa[2,9] in intestinal duplications as justification. It remains undetermined whether there truly is an increased incidence of malignancy in duplicated colons compared to native colons[10]; however, bleeding due to the presence of gastric mucosa in a colonic duplication has now been recently reported[9]. A single lumen colon, as described in this case, can also be created[4,6]. A mucosectomy and transection of the fistulating rectum below the peritoneal reflection is then performed transabdominally, or a posterior saggital approach can be used to excise the fistula; this prevents mucus discharge per vagina from a residual rectal pouch[2,4,7]. Finally, total mucosectomy[2] or resection of the duplicated colon while retaining the native colon has been described[7]. This is feasible when the colonic blood supply is not intimately related to that of the duplication[7]. This option avoids the morbidity of a total colectomy while eliminating the reported risks posed by the duplication.

In conclusion, these clinical features described should raise the suspicion of total colonic duplication. Associated anomalies should be investigated for and the outcome after a stapled anastomosis of both colons can be favourable.

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Lemierre's Syndrome, The Forgotten Disease

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Abstract

Lemierre's syndrome is a rare and potentially fatal entity affecting otherwise healthy and young adults. The infection originates in the throat and spreads via a septic thrombophlebitis of the internal jugular vein, with development of distant septic emboli. This clinical picture is characteristic but many clinicians are unaware of the condition and diagnosis is often delayed with potentially fatal consequences.[8]

Introduction

Lemierre's syndrome (or postanginal septicemia, or suppurative thrombophlebitis) is a rare but severe life-threatening complication of acute tosillitis. It is characterized as thrombophlebitis of the internal jugular vein that is associated with spread of septic emboli to the lungs and other sites[1]. Before the availability of antimicrobial agents, death was the common result (90%)[4], unless patients were treated with surgical ligation of the vein. The incidence of Lemierre's syndrome is about one per million per year[8]. It appears to have been relatively common in the preantibiotic era, in 1955 Alston identified 280 cases in the world literature[8]. It was rarely reported in the 1960s and 1970s possibly because of widespread use of penicillin for throat infection. Several papers in the 1990s highlighted that this "forgotten disease" had not gone away.[1,5,7,8] There has been an increase in reporting of Lemierre's syndrome over the last 10 years[2] due to increased antibiotic resistance or changes in antibiotic prescription patterns.

Case Report
A 28-year-old male, with no previous medical history, presented in the emergency room with a 3-day history of left neck swelling, pain, fever, odynophagia,dysphagia and 2-week history of tonsillitis and general weakness. He was treated with clarithromycin orally for 1 week by his GP. His temperature was 38.3^{0}C, regular pulse of 98/minute, respiratory rate of 19/minute and blood pressure of 124/75 mmHg. Oral examination demonstrated erythema and mild swelling of the tonsils without exudates. Left latero-cervical region was tender to palpation, with a mass of 4 cm diameter at level 2, firm, immobile and non fluctuant. Flexible nasofibroscopy was normal. The lungs were clear to auscultation. Laboratory data demonstrated WBC=12,2, CRP=70. A CT scan of the neck revealed a hypodense filling compatible with thrombus in the left internal jugular vein, with extensive surrounding inflammatory changes. Blood culture demonstrated Streptoccocus intermedius. The patient was treated with a combination of cefuroxime, metronidazole and clindamycin iv for 14 days, as per microbiology advice. Vascular surgeon recommended iv heparin for 24 hours, after that fractionated heparin for 6 weeks. The patient improved significantly, with complete resolution of symptoms. At follow-up, the patient was completely asymptomatic and appeared to have recovered without any residual effects.

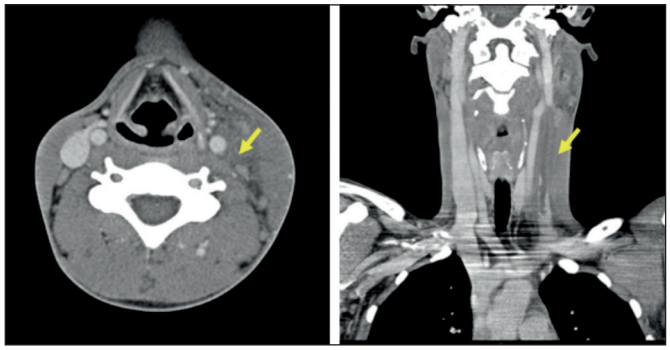

Figure 1 CT neck - left internal jugular vein thrombosis, axial and coronal view

Discussion
Lemierre's syndrome mainly affects young healthy patients[5]. It is an anaerobic suppurative thrombophlebitis involving the internal jugular vein, usually as a complication of pharyngeal, dental or mastoid infection. Fusobacterium necrophorum is the causative agent in 70 % of cases. Other Fusobacterium species were responsible for infection in 10% and other gram-negative organisms were responsible in 8%.[10] 12% of cases grew negative cultures.[4] The initial symptoms are usually nonspecific and include sore throat, fever, rigor and lateral neck tenderness. The disease usually begins as pharyngitis or tonsillitis. Spread of the infection to the deep pharyngeal tissue allows anaerobic organisms to drain into the lateral pharyngeal space, leading to internal jugular vein thrombophlebitis. Septic clots dislodge from internal jugular vein thrombus, causing pulmonary infarcts. Haematogenous seeding can also occur, resulting in septic arthritis, meningitis, endocarditis or soft tissue infection.[6] Diagnosis is made with positive blood culture combined with appropriate imaging findings, including retrograde venography (the gold standard), gallium scan, ultrasonography, computed tomography and magnetic resonance venography[6]. The therapy of Lemierre's Syndrome is a 4-6 weeks course of intravenous antibiotic with activity against Fusobacterium necrophorum, such as penicillin G, clindamycin or metronidazole. The role of anticoagulant therapy is controversial, but several clinical studies have shown that heparin may be beneficial[6], especially for thrombosis retrograde to the cavernous sinus. The mortality rate in untreated patients is as high as 30 - 90% with an embolic event rate of 25% and endocarditis rate of 12,5%[6].

As in this patient, an early clinical diagnosis of Lemierre's syndrome was made and confirmed by imaging studies. Our patient presented and was treated before septic metastases spread. This early recognition and intervention were probably the key contributing factors to our patient's good outcome and survival.

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Oesophageal Candidiasis in an Immunocompetent Child

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Abstract
We are reporting a rare case of oesophageal candidiasis in an immunocompetent child secondary to prolonged use of inhaled steroids.

Introduction
Infections of the oesophagus are rare and seen mostly in immunocompromised children. Common organisms include Herpes simplex virus, cytomegalovirus as well as Candida. Diagnosis of oesophageal Candidiasis involves identification of Candida species in oesophageal brushing or oesophageal biopsy[1]. Immunodeficiency may result not only from use of chemotherapy, chronic illness or congenital immunodeficiency, but also from prolonged use of steroids, even inhaled.

Case Report

A 9½ years old girl was admitted with six weeks history of epigastric pain. This was associated with odynophagia (painful swallowing) and dysphagia (difficulty in swallowing). She described her swallowing as food sticking in her oesophagus. She had abdominal pain for two years, vague in nature. There was no associated vomiting, diarrhoea or abdominal distension. Bowel habits were normal. She was on follow up for short stature which was thought to be familial. She was admitted twice before one year for the same complaint. In the first occasion, she was diagnosed with constipation, while acute appendicitis was suspected in the second, requiring appendicectomy. Appendix was found to be normal on histology. She also had adenotonsillectomy five years in addition to congenital ptosis; repaired surgically. The patient was on inhaled Beclometasone 200 micrograms twice a day in addition to Montleukast for four years for bronchial asthma.

Clinical examinations revealed no evidence of clubbing, vital signs were normal. There was no oral thrush. Chest, cardiovascular and abdominal exam was essentially normal. Her weight was 18.8 kg (<0.4th centile) and her height was 124.2 cm (2-9thcentile). Blood tests including full blood count, renal and liver function were all normal at this stage, as well as inflammatory markers. A diagnosis of eosinophilic eosphagitis (E.E) was suspected because of the history of asthma and the dysphagia, so an upper G.I Endoscopy was performed. This showed linear Candida plaques and mucosal hyperemea & erythema mainly in the middle part of the oesophagus. No ulcers were found.

Biopsies confirmed presence of chronic inflammation as well as Candida hyphae with mild esinophilia not sufficient to diagnose E.E. Treatment with Fluconazole, Nystatin and Daktarin was prescribed for six week. Investigations including immunology workup, HIV 1 & 2 screening and sweat test were conducted, all were normal. Significant improvement in swallowing was noticed post treatment; although the pain persists. Esomeprazole was started. She represented with recurrent abdominal pain. A repeat upper GIendoscopy was performed. The oesophageal mucosa was normal. On follow up; her weight improved to 20.3 kg meaning 1.5 kg weight gain in 6 weeks. She did not complain of dysphagia but continued to complain of abdominal pain.

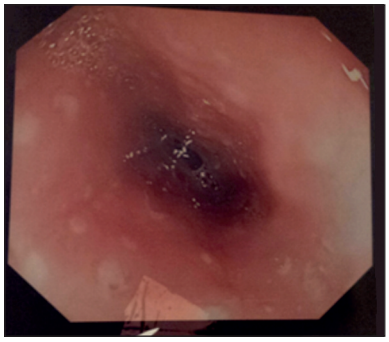

Figure 1

Whitish plaques of candida in the oesophagus

Discussion

Infections of the Oesophagus are rare and most commonly seen in immunocompromised individuals[1]. Candida species are commen salorganisms of the gastrointestinal tract[2]. The development of candidemia, however, strongly implies immunodeficiency, since it often occurs in immunocompromised patients[3]. Oesphageal candidiasis (OC) is well reported in immunocompromised patients especially those with HIV infection and malignancies. Long-term use of high-dose corticosteroids predisposes the patient to mucosal infection with Candida. Hasosah et al, from Saudia Arabia reported one case of OC in an 18 month old child[1]. They described a girl with no congenital or acquired immunodeficiency that had OC superimposed on reflux esophagitis. She presented with haemtemesis and malena. The girl was on inhaled corticosteroids for eight months. She responded very well to antifungal treatment. This is one of the few case reports on OC in immunocompetent child. Our case is the first in Caucasians and in this age group. We are attributing the cause of OC in this patient to prolonged use of inhaled steroids. This case illustrates that OC is a potential complication of inhaled steroid use even in the absence of oral candidaisis which adds another reason for ensuring that patients with asthma are using inhalers correctly.

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Imaging of Gunshot Injuries in a West Dublin Teaching Hospital – A Ten Year Review

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Abstract

There has been an increase in gun-related crime in Ireland over the last decade to gangland violence, especially in west Dublin. This places a burden on hospital services not previously encountered. The aim of this study was to examine the demographics of gunshot injuries presenting to a Dublin teaching hospital, and the impact on radiology over a ten year period. A total of 65 gunshot injuries were seen. Mortality for high velocity wounds was much higher (10/23, 43%) than for low-velocity shotgun injuries (2/34, 6%).

Introduction

Personal firearms are strictly licensed in Ireland and can only be owned under strict conditions. This has been suggested as a reason for the low rates of firearm injuries traditionally seen in Ireland. Redmond HP et al published a review of ten years of gunshot injuries in 1985[1] and found 21 injuries, 20 of which were with low velocity weapons, and four of whom died. Recent increased use of handguns in Ireland heralded a marked increase in mortality, to 8 of 17 (47%) in a paper published in 2008[2], whereas mortality from low velocity (shotgun) injuries was 1/31 (3%). Information from Northern Ireland during the years of conflict there showed that low velocity weapons were used for

Figure 1 Cadaveric post mortem imaging of a gunshot victim. The bullet was required for legal and ballistic purposes, and was located using plain radiograph in the right paravertebral soft tissues.

"punishment" by paramilitary organizations[3], which after the ceasefire of August 1994 was largely replaced by punishment beatings[4]. Appropriate imaging plays a crucial role in evaluation and management of firearm injury, especially high velocity (e.g. handgun) injury. Computed tomography (CT) can identify the site of the bullet and elucidate surrounding organ damage, to a far greater extent than radiography. Interventional radiology is increasingly required for management as well as diagnosis. Magnetic resonance imaging (MRI) has a limited role to play as the projectiles are metallic.

Methods

All patients presenting or brought by ambulance to Connolly Hospital Emergency Department (ED) between 2001 and 2010 were eligible for inclusion. A prospective database had been maintained of patients presenting with gunshot injuries. A chart review was carried out. Patient demographics and imaging performed for each patient were reviewed.

Results

65 patients with gunshot injuries were seen in the emergency department between 2001 and 2010, of whom charts were available in 59. The patients were aged between 15 and 52 (mean age 27.4), and only one was female. 29 gave their profession as unemployed, and 10 were from the travelling community in Ireland. As previously demonstrated, mortality for high velocity wounds was much higher (10/23, 43%) than for low-velocity shotgun injuries (2/34, 6%). It was also shown that bullet wounds tended to be focused around the torso, head and neck, and shotgun wounds tended to be concentrated around the peripheries. 8 patients died in the ED. Of the 51 patients that survived beyond the ED, 43 had radiography, and 15 had CT scans in the emergency setting, and a further 10 had follow up CT scans. 5 patients were transferred for emergent management in interventional radiology. Four patients underwent emergency ultrasound scans.

Discussion

The results show a dramatic increase in gun crime in Dublin over the previous 4 decades. The age profile had decreased (mean age 27 years, decreased from 31), and the mortality had increased, with a marked increase in high-velocity firearms, i.e. handguns, rifles and semi-automatic weapons. This has been widely attributed to increased gangland activity and the illegal drug trade. In a study published in 2005 in the European Journal of Public Health, mortality from opioid misuse had increased 15-fold from 1980 to 1999 in Ireland[5]. The number of firearm related injuries is still quite low by comparison with other developed nations. Cook County Hospital in Chicago in 1995 showed 476 gunshot wounds over a ten year period[6]; Prince Mshyeni Memorial Hospital, Durban, South Africa examined 78 gunshot injuries in just 6 months[7]. In both countries, gun ownership is less stringently controlled than in the Republic of Ireland.

The experience gained in large urban centres can be useful in dealing with gunshot injury, as it relatively rare in Irish residency training[8]. Despite the fact that some patients had succumbed to their injuries prior to medical assistance, many are still referred to the radiology department. During the period of the study, 15 cases underwent post-mortem radiological scanning. These cases are usually for forensic and legal purposes e.g. for dental age estimation[9], or bullet retrieval (see Figure 1). There has been a sharp increase in the numbers of admissions from gunshot injuries in a West Dublin hospital in the Republic of Ireland in the past decade. Despite this, the numbers in Ireland are still low by comparison with other developed countries, and the burden on our radiology department remains relatively low. Should the increasing trend continue, further resources and expertise may be required.

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CPD available online at www.imj.ie and questions on page 263.

A Novel Semi-Automated Method of Tracking Fetal Movements

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Abstract
We have designed software that can "look" at recorded ultrasound sequences. We analyzed fifteen video sequences representing recorded ultrasound scans of nine fetuses. Our method requires a small amount of user labelled pixels for processing the first frame. These initialize GrowCut[1], a background removal algorithm, which was used for separating the fetus from its surrounding environment (segmentation). For each subsequent frame, user input is no longer necessary as some of the pixels will inherit labels from the previously processed frame. This results in our software's ability to track movement. Two sonographers rated the results of our computer's 'vision' on a scale from 1 (poor fit) to 10 (excellent fit). They assessed tracking accuracy for the entire video as well as segmentation accuracy (the ability to identify fetus from non-fetus) for every 100th processed frame. There was no appreciable deterioration in the software's ability to track the fetus over time.

Introduction

Women who have had a stillbirth often report a decrease in fetal movements prior to baby's demise.[2] Despite the existence of diagnostic ultrasound for more than 60 years,[3] clinicians have failed to develop a reliable method of evaluating fetal movements. The biophysical profile has been evaluated in randomised controlled trails but there is insufficient evidence to support its use in assessing fetal wellbeing in high risk pregnancies.[4] The goal of the work reported here is the provision of a software package that can analyse recorded ultrasound sequences. At this stage a prototype version of the software package is undergoing tests to evaluate its ability to single out the fetus and track its movement.

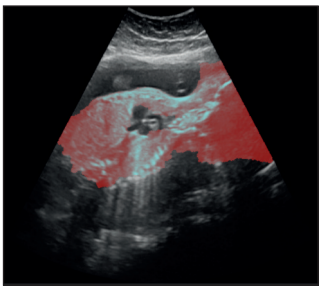

Figure 1

The tracking process: The colour red denotes the fetus as detected by the software. This frame also demonstrates the limitations of the software: a fetal limb has come into view just anterior to the fetal thorax and escapes detection by the software.

Methods

Segmentation is the process of labelling image pixels into predefined categories based on a set of rules which dictate the labelling decisions. In this work, the segmentation process labels image pixels into fetus vs non-fetus. The segmentation rule assumes that a change in pixel brightness values exists between two areas labelled fetus and non-fetus. This process is implemented using GrowCut,[1] a growing algorithm, which yields good segmentation results using only a small number of user labelled pixels. The algorithm is initialized with limited prior knowledge about the image content. In other words, a human operator places brush strokes inside and outside of the fetal area (a process referred to as seeding). After this, human input is not required as the software exploits temporal coherence in the videos (i.e. some of the pixels will inherit labels from the previously processed frame). This results in our software's ability to track movement.

Table 1 The average rating of the software's 'vision'

Video Length	Average Rating for Segmentation Accuracy	Average Rating for Tracking Accuracy
17	8.4	8.0
27	8.9	9.0
27	9.0	9.0
31	8.8	8.5
23	8.0	7.5
23	8.0	8.5
16	8.8	9.0
16	9.1	9.0
13	7.7	7.0
36	8.8	9.1
18	8.3	8.2
24	8.4	9.3
7	7.4	7.5
16	8.1	8.1

Results

We analysed a total of fifteen video sequences representing recorded ultrasound scans of nine fetuses. Figure 1 demonstrates the tracking process; the colour red denotes the fetus as detected by the software. Two obstetricians rated the results of our computer's 'vision' on a scale from 1 (poor fit) to 10 (excellent fit). They assessed tracking accuracy for the entire video as well as segmentation accuracy (the ability to identify fetus from non-fetus) for every 100th processed frame (Table 1). There was no appreciable deterioration in the software's ability to track the fetus over the time tested.

Discussion

We have shown that our software is able to distinguish the fetus from its surrounding environment and track its movements with minimal human interaction. Its limitation is that it is only semi-automated and requires some human input initially. This study is also limited in that its tracking accuracy over a prolonged period (over one minute) is unknown. We identified two distinct cases when the algorithm fails to track the fetus. It happens either when a new structure of interest appears in the ultrasound field of vision or when the structure disappears from the field of vision and subsequently re-appears. This problem is illustrated in Figure 1. We have analysed possible solutions to improve this situation. The first solution considered was to increase the manual input by allowing the user to amend the tracking process when necessary. Although this is guaranteed to improve the current experimental results, from a clinical perspective, this is not practical. Therefore, in order for us to advance this, a connection needs to be established between a structure that disappears and a structure that re-appears. This is a major challenge for the computer vision system because a recurring body part can look significantly different in size and shape between disappearance and re-appearance. We have now considered building an intelligent system by training it to discern between fetal and non-fetal areas based on cues such as textural appearance and motion.

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Tolerance of Colonoscopy and Questioning its Utility in the Elderly Population

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Abstract
This study was carried out from Jan '12-Dec '12 to assess current practice in Kerry General Hospital against the age related indicators for colonoscopies. A total of 1474 colonoscopies were performed, 1177 (79.9%) were diagnostic and 297 (20.1%) were therapeutic, patients were divided into 4 age groups under 75, 75-80, 81-85, 86+. The trend analysis revealed an increase in diagnostic colonoscopies and decrease in therapeutic colonoscopies with age. 664 (45.04%) of colonoscopies were reported normal which made up the majority of the total diagnoses, 1330 (90.2%) of colonoscopies occurred without any complications. Main complications were patient discomfort being the highest, present in 112 (7.6%) of patients, and lowest being urticaria around the IV site present in 1 (0.1%) of the cases. Patient discomfort was higher in younger patients as evidenced by 98 cases aged <75, followed by 11 cases aged 75-80, 2 cases aged 81-85 and 1 case aged >86. Highest percentage of poor tolerance was found in 14 (1.1%) of total patients <75, 1 (0.8%) of total patients aged 75-80, 1(1.7%) of total patients in age group 81-85 and none (0%) in age group >86. We have established the safety of colonoscopy, low rate of complications and a better tolerance in the elderly from this study, however, its utility, especially in presence of other comorbidities in elderly is questionable.

Introduction
The tolerance and appropriateness of Colonoscopies has always been of great interest to Gastroenterologists. Various recommendations exist however no particular guidelines are available that address the issues specifically. The aim of this study was to determine the same and attempt to develop an appropriate pathway of referral for elderly patients requiring colonoscopy.

Methods
We retrospectively analysed the data of colonoscopies performed at KGH from Jan '12-Dec '12. Data was divided 4 major age groups, <75, 76-80, 81-85, 86+. The factors analysed were Gender, Indications, Type (Diagnostic/Therapeutic), Age Categories against Depth of Insertion, Diagnosis and Complications.

Results
A total of 1474 colonoscopies were performed, of which 728 (49.39%) were males and 746 (50.61%) were females, 1253 (85.01%) were aged <75, 133 (9.02%) were aged 75-80, 60 (4.07%) were aged 81-85, and 28 (1.90%) were of age 86+, 1177 (79.9%) of colonoscopies were diagnostic and 297 (20.1%) were therapeutic. In age group <75 988 (78.9%) were diagnostic and 265 (21.1%) were therapeutic. In age group 75-80 111 (83.5%) were Diagnostic and 22 (11.7%) were therapeutic. In age group 81-85 53 (88.3%) were Diagnostic and 7 (11.7%) were Therapeutic. In age group >86 25 (89.3%) were Diagnostic and 3 (10.7%) were therapeutic colonoscopies. 664 (45.0%) of colonoscopies were reported as normal; other diagnoses in decreasing incidence were Diverticulosis 210 (14.24%), Hemorrhoids 114 (7.73%), Single Polyp 54 (3.66%), Multiple Polyps 20 (1.36%), Diverticulosis with Hemorrhoids 17 (1.15%), Diverticulosis with polyps 14(0.95%), Malignant tumour 12 (0.81%). Miscellaneous findings which could not be categorized as any of above made up a total of 25.03%.

Highest recorded indication was overt rectal bleeding in 194 (13.16%) patients, and lowest being chronic constipation with abdominal pain 16 (1.9%). No indications were recorded for 97 (6.6%). 53 (3.6%) were screening colonoscopies, 49 on which were performed on patients <75 and the remaining between the age range 75-85. 1330 (90.2%) colonoscopies took place without any complications. Patient discomfort was highest recorded complication present in 112 (7.6%) of the total subjects, the highest of which, was recorded in under 75 age group (98 cases) followed by 75-80 age group (11 cases), 81-85 age group (2 cases) and >86 age group (1 case). Lowest occurring complication was utricaria around IV site, recorded in 1 (0.1%) of patients. Highest percentage of poor tolerance was found in 14 (1.1%) of total aged <75, 1 (0.8%) of total aged 75-80, 1 (1.7%) of total aged 81-85 and none in >86 age group. Patient distress was documented in 5 (0.4%) of total aged <75. None in 75-80 and 80-85, and 5 (0.3%) of total aged >86. 84.53% colonoscopies were performed up to the caecum.

Discussion
From these results we can establish the safety, low complication rate and good tolerance of Colonoscopy in the elderly. However the incidence of therapeutic colonoscopies can be seen to reduce with age. U.S. preventive services task force recommends screening for cancer using faecal occult blood, sigmoidoscopy or colonoscopy in adults from 50 yrs and continuing until 75 years. It recommends against routine screening for colorectal cancer in adult age 76-85 years, but there may be individual exceptions. It recommends against screening for colorectal cancer in adults>85 years[1]. Average Life expectancy at birth in Ireland is 80.32 years (Male 78.18, Female 82.83);[2] out of which healthy life years are approximated around 65.9 for males and 67.0 for females;[3] so it is questionable if elderly population should undergo diagnostic/screening colonoscopies in presence of co morbidities. We recommend that age alone should not be considered a contraindication, however in presence of co morbidities, an MDT should be set up which consists of experts in Geriatrics and Gastroenterology who can assess the patient on individual basis, and decide unanimously on whether to proceed with the colonoscopy or otherwise, based on the risk/benefit ratio.

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Trisomy 21 – Incidence and Outcomes in the First Year, in Ireland Today

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Abstract
Incidence of Trisomy 21 in Ireland, 1:546 live births, is the highest in Europe. This project aimed to define the incidence of T21 amongst liveborn infants at Cork University Maternity Hospital (CUMH), and to describe neonatal outcomes and progress in their first year. Infants were identified from Social Work department records. A retrospective review of the neonatal inpatient database, outpatient letters and medical charts was performed. Forty three infants with T21 were born in CUMH in 2010 and 2011. Incidence of T21 was 1:411. Antenatal diagnosis was uncommon at 14% (6). 34 (79%) were admitted to the neonatal unit. Co-morbidities included congenital heart disease 22 (51%) and duodenal atresia 2 (5%). Thirty four were followed-up in CUMH outpatient department. Of these, 34 (100%) had thyroid function testing, 29 (85%) ophthalmology and audiology referral, and 7 (21%) were referred for hip review. Mortality rate was 9% (4). Readmission to hospital in the first year of life was 42% (18).

Introduction

Trisomy 21 (T21), also known as Down syndrome, is the commonest chromosomal disorder in liveborn infants.[1,2] Incidence is approximately 1-2 per 1000 livebirths worldwide but in Ireland is 1 in 546. T21 is associated with variable degrees of cognitive impairment and a wide range of disorders, including congenital heart disease, gastrointestinal atresia, feeding difficulties, hearing loss, ophthalmologic disease, thyroid disease and hip abnormalities.[3] Surveillance is recommended throughout early childhood.[4,5] Outcomes of infants with T21 have not previously been audited in our department. This study aims to document outcomes in the first year of life, for infants with T21 born in our hospital.

Methods

The primary study site was Cork University Maternity Hospital (CUMH). Additional study sites included the paediatric departments at Cork University Hospital (CUH), Bon Secours Hospital Cork (BSH), and Mercy University Hospital (MUH). All liveborn infants with T21, born at CUMH in 2010 and 2011, were chosen as the study population. A retrospective review of the neonatal inpatient database, medical charts, outpatient letters and i.Laboratory Web Enquiry system, was performed. CUH, MUH and BSH were contacted to identify admissions in the first year of life.

Results

There were 17,684 liveborn infants in CUMH in 2010 and 2011. 43 were diagnosed with T21, giving an incidence of 1:411. The mean (range) maternal age was 36 (22,44) years. 6 (14%) were diagnosed antenatally by amniocentesis and 37 (86%) postnatally. 34 (79%) were admitted to the neonatal unit. Reasons for admission are outlined in Table 1. There was more than one reason for admission in 6 cases. Median (IQR) duration of stay in CUMH was 7 (5,20) days. Including time spent in other centres, median (IQR) total duration of hospital stay was 8 (5,25) days. 22 (51%) had congenital heart disease, 14 of whom had an atrioventricular septal defect (AVSD). 4 developed cardiac failure in the neonatal unit and 4 were transferred to other centres for tertiary cardiac care.

7 (16%) were diagnosed with gastrointestinal morbidity, all of whom required surgical management in other centres. Two infants had duodenal atresia. 4 (9%) infants died: three in the neonatal period (cardiac failure 1, necrotising enterocolitis and sepsis 1, and hydrops fetalis 1), and one at four months of age due to cardiac failure. 34 were followed-up in CUMH neonatal outpatient department. All infants followed-up had thyroid function testing. 29 (85%) were referred to audiology and ophthalmology. 7 (21%) were referred to orthopaedics for hip surveillance, 2 of whom had clinical concerns regarding hip instability. 18 (42%) were readmitted to hospital in their first year for reasons including infection and feeding difficulty. Two infants were RSV positive, one of which was during their primary hospitalisation.

Table 1 Reasons for admission to the neonatal unit

Reason for admission (N=34)	N (%)
Poor feeding	11 (32)
Cyanotic episodes	11 (32)
Prematurity/Intra-uterine growth restriction	8 (24)
Hypothermia	5 (15)
Jaundice	2 (6)
Antenatally suspected duodenal atresia	1 (3)
Antenatally diagnosed cardiac anomaly	1 (3)
Umbilical erythema	1 (3)
Hypoglycaemia	1 (3)
Hydrops fetalis	1 (3)
Perinatal stress	1 (3)

Discussion

The incidence (1:411) of T21 at CUMH is similar to recently quoted national data of 1:546.[4] The 2006-2010 EUROCAT survey demonstrated a 17% antenatal diagnosis rate, similar to the 14% in this study. The majority (79%) were admitted to the neonatal unit at birth. A higher antenatal diagnosis rate would not necessarily improve outcomes as reasons for admission were not immediately life-threatening. The presence of congenital heart disease was either the primary cause or a contributing factor to the deaths of four infants, resulting in a mortality rate of 9%. This is similar to the 7% 1st year mortality reported in the USA.[8] Guidance for screening in the first year is published and was followed in the majority of cases. T21 is associated with various hip problems, generally during later childhood, but T21 should not be regarded as an independent risk factor for congenital hip dysplasia. The 2011 American Academy of Pediatrics guidelines do not discuss hip dysplasia.[5] There were multiple causes of the high (42%) readmission rate in the first year. Two infants were identified as RSV positive, one whilst an inpatient in the neonatal unit. The second infant was a term baby with a normal heart readmitted at 16 weeks old with bronchiolitis. Our practice is that infants with T21 and haemodynamically significant heart disease, e.g. AVSD, are recommended to receive Palivizumab prophylaxis.

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Placental Pathology Associated with Small for Gestational Age Infants

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Abstract
Infants with intrauterine growth restriction (IUGR) are at an increased risk of perinatal disease, including death. Many, but not all small for gestational age infants (SGA) have IUGR. Placental disease is an important cause of IUGR, and gross and microscopic examination is critical in explaining such cases. Reports of placentas from infants with a birth weight <2SD from the mean (approx 3rd centile) born between Jan 2004-Dec 2011 were evaluated. The principal pathology was determined in each case. Where two or more pathologic findings were present, they were ranked as principal and co-existing in terms of severity. There were 69,493 deliveries over the study period. 461 SGA cases were identified. No placenta was available in 44 cases, and 21 cases of known anomalies were excluded, leaving a study group of 396 cases. Pathology potentially causing or contributing to SGA and/or IUGR was identified in 84.1% of cases. Significant co-existing pathology was seen in 88 cases (22%). Placental examination provides key information in understanding abnormal fetal growth.

Introduction

Infants that are small for gestational age (SGA) not only have increased perinatal morbidity and mortality, but are also at risk of obesity, diabetes and heart disease in later life[1]. Some of these infants may be growth restricted, and distinguishing between intrauterine growth restriction (IUGR) and SGA can be problematic[2]. IUGR and SGA are variably defined as less than the 10th, 5th or 3rd centiles: the use of the smaller centiles mean that constitutionally small normal infants are less likely to be included. Regardless of the presence or absence of growth restriction, morbidity and mortality are increased among infants born at term whose birth weights are at or below the 3rd centile[3]. Women who deliver an SGA infant in their first pregnancy are significantly more likely to deliver an SGA infant in their second pregnancy[4]. Placental disease is an important contributing factor to intrauterine growth restriction. Gross and microscopic examination of the placenta permits an assessment of some factors that affect intrauterine growth, and information gained may not just explain the current pregnancy outcome, but may also influence management of subsequent pregnancies[1]. The value of placental examination has been emphasised by the Lancet's Stillbirths Series steering committee in 2011[5]. The increasing importance of standards in placental examination was emphasised by the publication for the first time of a dataset guiding placental examination in 2011 by the Royal College of Pathologists (UK)[6]. We report the findings in a cohort of placentas from SGA infants, which we defined as <3rd centile, from a single institution over an 8 year period and discuss the importance of the placental pathologies identified.

Methods

Reports of placentas of infants with a birth weight <2 SD from the mean (approx. 3rd centile) born between Jan 2004-Dec 2011 were evaluated. Exclusion criteria were multiple gestation, known congenital anomaly, or gestational age < 24 weeks. The cohort included a small number of babies who were stillborn. The principal pathology was determined in each case and assigned to a category 1-8 as given in Table 1. Where two or more pathologic findings were present, they were ranked as principal and co-existing pathology in terms of severity of disease. Diagnosis and grading was as previously described[8,10]. A small placenta was one weighing<350g (trimmed) at term. Data for acute pathologies e.g. acute chorioamnionitis were not included. The hospital operates a clinically oriented triage system that ensures that placentas of interest are examined. Included in these are cases less than or equal to the third centile, corrected for gender[2]. At delivery, small sections of cord, membranes and parenchyma are sampled and stored and are available for subsequent histologic evaluation in the event of a neonatal complication. Standard placental evaluation included gross examination and microscopic evaluation of two cross-sections of umbilical cord, two sections of membranes, and 5 sections of parenchyma taken from the inner two-thirds of the disc.

Table 1 Placental Pathology in SGA Infants

Category	Finding	Principal Pathology (%)	Co-existing Pathology (%)	Prevalence*
1	Uteroplacental Ischaemia	148 (37.4%)	15 (3.8%)	3.7%
2	Fetal Thrombotic Vasculopathy	29 (7.3%)	26 (6.6%)	2.9%
3a	Villitis, low grade	31 (7.8%)	16 (4.0%)	9.9%
3b	Villitis, high grade	38 (9.6%)	12 (3.0%)	1.7%
4	Increased perivillous fibrin w/without intervillositis	20 (5.1%)	6 (1.5%)	0.1%
5	Delayed Maturation	62 (15.6%)	13 (3.3%)	5.7%
6	Small Normal	23 (5.8%)		
7	Normal	40 (10.1%)		
8	Other	5 (1.3%)		
Total		**396**	**88**	

*Prevalence for categories 1-4 from reference 10 and for category 5 from reference 8

Results

There were 69,493 deliveries over the study period. Four hundred and sixty one SGA cases were identified. On review, 21 were excluded as above. No placental histology was available in a further 44 cases, leaving a study group of 396 cases. In 380 of these, a complete macroscopic examination with full sampling, microscopic interpretation and diagnosis was available. A further 16 cases had placental tissue sampled in the delivery ward – while this allowed microscopic examination, a full gross examination on these cases was not available. Pathology potentially causing or contributing to SGA was identified in 84.1% of cases (Table 1). Uteroplacental insufficiency/ischaemia was the most common finding and was the primary pathology in 37.4% of cases.Co-existing pathology was found in 88 (22 %) of cases. The small number of cases in the "other" category (5, 1.3%) mostly showed chorangiosis, felt to be an adaptive response of the placenta rather than a cause of SGA.

Discussion

This study reveals placental pathology in over 84% of cases of SGA infants (88% if a small but histologically normal placenta is regarded as abnormal), and emphasises the relevance of placental examination in this cohort by specialised pathologists working closely with obstetricians and neonatologists. IUGR/SGA may be regarded as the late manifestation of many different diseases with different causes[7]. Placental disease contributing to SGA can broadly be categorised as either maternal or fetoplacental in aetiology. Maternal factors include chronic disease, hypertension and vasculopathy. In addition to congenital and chromosomal anomalies, fetoplacental factors include abnormal placentation, immunologic reactions such as villitis, and thrombotic disease[8]. The understanding of these requires integration of macroscopic and microscopic findings with clinical outcome. Evidence of UPI was the most common pathologic finding in our review(37.4%) and is consistent with that of other workers[7]. Recent work suggests that UPI and a spectrum of other complications (referred to as "the great obstetric syndromes") are due to shallow implantation. Successful placentation requires remodelling of the spiral arterioles following implantation of the blastocyst. The size of the placental bed and the depth of the arteriolar transformation are two major factors determining sufficient maternal blood flow to the placenta, with deep placentation involving transformation of approximately 100 arterioles in the decidual and myometrial segments. Defective deep placentation is not only associated with IUGR, but also pre-eclampsia, abruptio placentae, spontaneous abortion and preterm labour, a spectrum of disorders characterised by uteroplacental insufficiency[9].

Villitis is a third trimester phenomenon that is found in approximately 11% of placentas[10]. It is usually low-grade, with high-grade villitis found in less than 2% of placentas. High-grade villitis was over-represented in SGA infants in our series, being identified in almost 10%. Villitis is usually an immunologic phenomenon and may impact on fetal growth by decreasing placental reserve, but it is also associated with neurologic impairment[11]. Similarly, damage to the fetal microcirculation caused by fetal thrombotic vasculopathy (FTV) is associated with growth restriction and neonatal encephalopathy[8,10]. Delayed villous maturation (DVM), also called distal villous immaturity(DVI), was seen as the principal pathology in 15.2% of our cases. DVM/DVI is associated with maternal metabolic disease, diabetes, glucose intolerance and obesity. Its role in SGA remains to be clarified: some reports make an association with intrauterine fetal death and growth restriction[12], but a retrospective study carried out in our own institution showed IUGR was less common with DVM/DVI than with controls[13]. Microscopic placental examination revealed co-existing chronic pathology in 22% of our cases. In some cases, given the prevalence of disease, this may be a chance association. However, we have previously shown that FTV is found four times more frequently than expected in cases of uteroplacental ischaemia[14]. The finding of two pathologies is therefore not surprising. Placental findings in SGA may not just explain the outcome of the index pregnancy, but may provide information that can assist in management of subsequent pregnancies. Villitis[15], increased perivillous fibrin and chronic histiocytic intervillositis may all recur in subsequent pregnancies. The latter two were uncommon in our study (20 cases, 5.1%), but are important clinical findings.

A major strength of this study was the availability of placental tissue in 90% of cases of interest. This is the result of a robust triage system with continuous active participation by delivery ward staff encouraged by obstetricians and neonatologists. In our institution, should any placenta not be submitted for pathological examination immediately after birth, a placental sample remains available for 1 year for retrospective microscopic examination. This allowed us to retrieve a further 16 cases, otherwise not available for microscopic interpretation. Limitations common to retrospective studies were the use of population norms rather than individualised values in assessing infants. Individualised assessment enables more rigorous separation of SGA from IUGR. While this was not a controlled study, the figures for prevalence of disease (Table 1) are from a large controlled study (816 cases) in an Irish population[10] and are, we feel, valid for comparsion with the current findings. Assessment of other variables such as cord coiling changed over the time period of this study and as such were not presented here. We feel that the use of the 3rd centile optimises the relevance of this study in focusing on a group at risk of increased morbidity and mortality. Examination of the placenta can provide valuable information to parents and clinicians in the majority of cases, and may include findings that impact on the management of subsequent pregnancies.

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Neonatal Telephone Consultations in the National Maternity Hospital

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Abstract
Details of telephone consultations concerning infants were recorded prospectively over a two month period in the National Maternity Hospital (NMH). There were one hundred and forty-six calls recorded. One hundred and sixteen (79.5%) calls were from mothers. The average age of the infants was twenty-eight days. Eighty (54.8%) calls were answered by Nursing Staff while the remainder were taken by Doctors. There were thirty-nine (26.7%) calls relating to the gastrointestinal system. There were twenty-seven (18.5%) calls regarding infants with respiratory concerns. The next most common problem was irritability followed by calls concerning jaundice, rashes and umbilical issues. Fifty-five (37.7%) callers were given home care advice or reassurance. Thirty-six (24.7%) were advised to attend a Paediatric Emergency Department (ED). GP visits and Baby Clinic appointments were advised for twenty-four (16.4%) and twenty-three (15.8%) infants respectively while six (4.1%) of the callers were directed to attend NMH immediately.

Introduction

Outside line telephone calls to hospital staff are a frequently neglected area of healthcare delivery. Telephone calls from worried care providers regarding unwell infants are common. The advice provided is not standardised and protocols are not in general use. The advice provided is rarely recorded or formally documented. This review was undertaken to determine the number and nature of telephone consultations in relation to young infants. The authors wanted to quantify who was calling and what were the issues they were calling about. We also wanted to define what recommendations we are providing as healthcare workers.

Methods

A proforma was created for the purpose of this review. This was distributed throughout the National Maternity Hospital at locations where staff were likely to be receiving calls. Details recorded included the sex and age of the infant, the relationship of the caller to the infant and the issue that had led them to contact the hospital for an opinion. Staff members receiving a call were then asked to record their position (nurse or doctor) and whether they felt that the caller's level of concern was mild, moderate or severe. There were five options for follow up provided on this proforma. These included reassurance & home care advice, attend GP, Baby Clinic appointment, attend The National Maternity Hospital immediately and referral to a Paediatric ED. Calls were recorded prospectively over a two month period in late 2010.

Results

There were one hundred and forty six calls recorded. Eighty (54.8%) calls were recorded by Nursing Staff. The remaining sixty-six (45.2%) calls were recorded by Doctors. The vast majority of forms were fully completed. One hundred and sixteen (79.5%) calls were made by mothers while sixteen (11.0%) were made by fathers. Health Care Professionals including General Practitioners and Public Health Nurses accounted for eleven (7.5%) of the calls. One hundred and twenty one (82.9%) infants were less than six weeks old. One hundred and eleven (76.0%) calls were received between 8am and 5pm. There were thirty-nine (26.7%) calls regarding gastrointestinal problems including reflux, vomiting, constipation, appearance of stools and colic. There were twenty-seven calls regarding respiratory concerns including breathing difficulties, cough and noisy breathing. Sixteen (11.0%) calls related to babies described as irritable. Fourteen (9.6%) calls were regarding jaundiced babies while a further fourteen (9.6%) calls were concerning rashes. Eight (5.5%) calls were about the umbilicus. Fifty-five (37.7%) were given home care advice & reassurance. Thirty-six (24.7%) were advised to attend a Paediatric Emergency Department immediately. Twenty-four (16.4%) were advised to attend their GP. Twenty-three (15.8%) were advised to attend the National Maternity Hospital Baby Clinic while six (4.1%) were advised to come to the National Maternity Hospital immediately. The level of concern of the caller was described as mild in sixty-four (43.8%), moderate in sixty-two (42.5%) and very concerned in eighteen (12.3%).

Discussion

This review highlights the large number of care providers (mostly parents) in the community who are seeking assistance and advice from health care professionals in our hospital on a daily basis. The majority of these calls are dealt with by simple reassurance and advice. However amongst the many infants with uncomplicated medical concerns, we noted that there were some infants with more significant problems. These included a case of constipation which on consultation was suspicious for bowel obstruction in a five day old infant. He was referred to a Paediatric ED where he subsequently required surgery. Within the group of irritable babies was a case of newly diagnosed hydrocephalus in an infant who had previously been treated for GBS meningitis.

The subjective level of concern of the care giver as assessed by the staff member answering the call may have influenced the advice provided. Of the sixty-four calls considered to be mildly concerned, thirty (46.9%) were given home care advice while four (6.3%) were advised to attend a Paediatric ED. Fourteen callers (21.9%) were given Baby Clinic appointments which was equal to the number referred to attend their GP. No callers were advised to come to NMH immediately in the mildly concerned group. Among the sixty-two considered to be moderately concerned, twenty

Table 1 Details of telephone calls received

	Telephone Call Details					
Number	146 Total	116(79.5) Mother	16(11.0) Father	11(7.5)Health Care Professional	3(2.1) Other Family	
Infant age	28 days old (mean age)	121(82.9) Six weeks or less	20(13.7) More than six weeks	5(3.4) Form not completed		
Time	111(76.0) Between 8am – 5pm	21(14.4) Between 5pm -12am	7(4.8) Between 12am – 8am	7(4.8) Form not completed		
Presenting Complaint	39(26.7) Gastrointestinal	27(18.5) Respiratory	16(11.0) Irritable	14(9.6) Jaundice	14(9.6) Rashes	36(24.7) Other
Advice Given	55(37.7) Reassurance & Home Care	36(24.7) Attend Paediatric ED	6(4.1) Attend NMH Immediately	24(16.4) Attend GP	23(15.8) Attend NMH Baby Clinic	2(1.4) Form not completed
Level of Concern	64(43.8) Mildly Concerned	62(42.5) Moderately Concerned	18(12.3) Very Concerned	2(1.4) Form not completed		

Table 2 Advice provided according to level of concern of caller

	Mildly concerned	Moderately Concerned	Very Concerned
Reassurance & Home Care advice	30(46.9)	20(32.2)	4(22.2)
Attend Paediatric ED	4(6.3)	24(38.7)	7(38.9)
Attend NMH immediately	0(0)	3(4.8)	3(16.7)
Attend GP	14(21.9)	8(12.9)	1(5.6)
Attend NMH Baby Clinic	14(21.9)	6(9.7)	3(16.7)

(32.2%) were given home care advice while twenty-four (38.7%) were advised to attend a Paediatric ED. Eight (12.9%) were advised to attend their GP while six (9.7%) were provided with Baby Clinic appointments. Three (4.8%) patients were requested to attend the National Maternity Hospital immediately. Eighteen of those calling were felt to be very concerned during the telephone consultation. Of these, four (22.2%) callers were reassured and given home care advice. Three (16.7%) callers were offered Baby Clinic appointments. Similarly, three (16.7%) patients were advised to attend the National Maternity Hospital immediately. Only one (5.6%) patient was advised to attend their GP. Seven (38.9%) callers in the very concerned group were told to attend a Paediatric ED.

The use of paediatric telephone consultations has previously been investigated. As far back as 1984 in Australia, Oberklaid et al[1] argued that it was not acceptable that outside lines be dealt with in an "ad hoc manner" and recommended the creation of a dedicated telephone service with recognised protocols. In the United States, telephone consultation services for worried parents have been routinely provided for decades[2,3]. These facilities use recognised American Academy of Pediatric guidelines for paediatric telephone consultations. A review of one such nurse-delivered after-hours paediatric telephone consultation service in Denver[4] showed that 45% of callers received home care advice, 30% were told to contact the Paediatrician tomorrow and 4% were referred to the on call Paediatrician while 21% were advised to attend their local Paediatric Emergency Department. Further research from Kempe et al[5] in Denver demonstrated that parents were likely to comply with the advice given where the advice was for either Paediatric ED review or simple home care advice. They were less likely to comply with intermediate levels of advice such as to attend their Paediatrician the next day. This study also suggested that the service was safe with a potential rate of under-referral with subsequent hospitalisation of 0.2%. They noted that under-referral was associated with calls received after eleven at night and age of less than six weeks or more than twelve years. Infants 6 weeks or less accounted for the majority of our population. Telephone consultations relating to young infants are potentially difficult and dangerous as visual clues are such an integral part of the assessment[6]. There may be reluctance among those answering calls from worried parents to document the consultations due to the fear of being held accountable in terms of litigation[7]. Training in the use of recognised protocols would help to protect both children and medical staff.

Such services are not exclusive to paediatric care in the United States[8]. Call centres are in common use in countries including Australia, Switzerland[9] and Israel[10]. Kidsnet was developed following research from Oberklaid et al in Sydney. This service deals with over 20,000 calls per year using accredited hospital protocols. The advice that Kidsnet provides is perceived by the public as being highly accurate and valued[11]. In the UK, 30-40% of calls made to NHS Direct are in relation to children[12]. Parental satisfaction with such paediatric after-hours telephone services is high[13]. They provide worried parents with a valued opinion which is considered safe and reliable. This helps to ease the burden on local emergency departments as usually the issues these parents are concerned about can be dealt with by parental reassurance and home care advice alone[14]. It was noted that the majority of calls were received during daytime working hours. Due to a lack of funding there is currently no plan to create a dedicated telephone service to deal with this demand.

The current system of unfiltered calls arriving through to hospital staff and outside line bleeps to busy junior doctors may be largely helpful to the public but it is potentially hazardous for all parties as well as time consuming[15]. However the public demands twenty-four hour access to health information[16]. As healthcare providers we must develop strategies to meet this demand in a safe and effective manner. Greater awareness of the Health Service Executive website, www.hse.ie, would be useful in this regard. This website provides answers to many of the questions about which parents most frequently call. A postnatal booklet for new parents containing advice about many of the common neonatal problems highlighted by this review has recently been created in the National Maternity Hospital. Information concerning common neonatal problems could also be made available on the hospital website. Efforts to improve parental education could reduce pressure on primary care and out-patient services, while also decreasing the number of telephone consultations.

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Incidence of Central Line Related/Associated Bloodstream Infections in an Acute Hospital

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Abstract
Bloodstream infection related to a central venous catheter in the intensive care unit is a substantial clinical and economic problem. The aim of the study was to examine the incidence of central line related bloodstream infections and central line associated bloodstream infections in Our Lady of Lourdes Hospital, Drogheda, during a six month period, using an active patient based prospective surveillance method. CLRBSI rate in ICU/HDU was 0.93/1000 central line days. There was no CLABSI identified in the studied time period. However, further interventions are needed, particularly with CVC care bundle. Also, the implementation of 2% chlorhexidin in 70% isopropylalcohol use for skin asepsis, which is recommended by the Irish national guidelines, would be beneficial.

Introduction

Bloodstream infection related to a central venous catheter (CVC) in the intensive care unit (ICU) is a substantial clinical and economic problem.[1] Attributable mortality is estimated between 2% and 35%, and length of stay in the ICU is thought to increase by 9.5 to 11.9 days, causing substantial economic cost and excess morbidity.[2,3] Preventative strategies to reduce the prevalence of catheter related blood-stream infections (CRBSI) have been effective in other countries. These include education of health-care workers (HCWs) about correct catheter insertion and maintenance, routine monitoring of CRBSI rates, adherence to hand hygiene, the use of a dedicated infusion therapy team, use of sterile semi permeable dressings and removing the intravascular catheter as soon as possible.[4,5] The aim of this study was to examine the incidence of central line related bloodstream infections (CLRBSI) and central line associated bloodstream infections (CLABSI) in Our Lady of Lourdes Hospital (OLOLH), Drogheda, during a six month period. There is no national healthcare associated infection surveillance programme established in Ireland. National data on CLRBSI/CLABSI incidence in Ireland is currently unavailable. However, following implementation of the planned national critical care audit programme in Ireland, it is anticipated that a national report will be available in the near future.

Methods

The study was conducted in ICU and High Dependency Unit (HDU) in Our Lady of Lourdes Hospital (OLOLH) in Drogheda from 1st January 2013 to 30 Jun 2013. OLOLH is a 339 bed acute general hospital providing acute medical, surgical and maternity services to a catchment area of 307 032 people in counties Louth, Meath, and North County Dublin. Trauma services are provided for patients in above mentioned area as well as for those in county Cavan and Monaghan. ICU/HDU accommodates medical, surgical and trauma patients and provides five level 3 and three level 2 beds. An active patient based prospective surveillance method was used in the study. Data was stored in an Excel spreadsheet on a password protected secure drive which only the hospital's Infection Prevention and Control Team had access to and was backed up by hospital server. The duration of central line insertion was recorded by the nursing staff in the ICU/HDU. Positive blood cultures were recorded daily by a surveillance scientist and reviewed daily by a Consultant Microbiologist and a Consultant Anaesthetist. A multi disciplinary committee was formed in July 2012 and the committee reviewed all methods to conduct this surveillance e.g. the Hospital in Europe Link for Infection Control through Surveillance (HELICS), CDC. However due a lack of resources, namely a critical care audit nurse, it was decided the most suitable guidelines to conduct this surveillance in this hospital was the CDC definitions for CLRBSI and CLABSI.

CLRBSI occurs, when patient has at least one of the following signs or symptoms: fever (>38oC), chills, or hypotension and positive laboratory results are not related to an infection at another site. CLABSI, a term used by the CDC's National Healthcare Safety Network (NHSN), is a primary bloodstream infection (BSI) in a patient that had a central line within the 48-hour period before the development of the BSI and is not related to an infection at another site.[6] Most of the catheters used in ICU/HDU were four-lumen CVCs. The usual insertion site was internal jugular vein as well as subclavian vein. None of the catheters were coated. The blood cultures were processed in the Microbiology Department OLOLH on analyzer Bact Alert 3D (Biomerieux, Marcy L'Etoile, France). ICU/HDU was routinely audited by Infection prevention and control team. Hand hygiene audits showed 63% compliance in January and 95% in May 2013. Environmental audit score was 88% in the studied time period. CVC care bundle was not in place at that time.

Results

234 patients were included in the study. Only 1 CLRBSI was identified in the time period January to June 2013. CLRBSI rate was calculated as follows:

Total number of CLRBSI = 1 x 1000 = rate per 1000 central line days

Total number of Central Line days=1070.

CLRBSI rate in ICU/HDU was 0.93/1000 central line days. There was no CLABSI identified in the studied time period. The patient with CLRBSI had a CVC inserted in internal jugular vein for 9 days and an arterial line was 10 days in situ. He was ventilated and naso-gastric (NG) tube fed. Antimicrobial treatment with meropenem and vancomycin lasted for 14 days prior to developing CLRBSI and the main indication was a severe community acquired pneumonia of an unknown origin. Underlying conditions were myocarditis and IgG immunodeficiency. The causative organism of CLRBSI was Staphylococcus haemolyticus, isolated from two sets of positive blood cultures and the line tip. Our data suggests a very low incidence of CLRBSI/CLABSI in ICU/HDU in our hospital setting. Further interventions are needed, particularly with CVC care bundle. Also, the implementation of 2% chlorhexidin in 70% isopropylalcohol use for skin asepsis, which is recommended by the Irish national guidelines, would be beneficial.

Discussion

Our study showed CLRBSI rate as low as 0.93 per 1 000 central line days. CLABSI rate was 0 per 1 000 central line days. The incidence rate was below expected level of 1.1, found in comparable critical care units in US hospitals. This data was published in Device-associated Module of National Healthcare Safety Network (NHSN) Report in 2010.[7] A study in an 18-bed medical ICU of a large teaching healthcare facility in Geneva reported an incidence rate of 5.8/1000 central-line days for microbiologically documented BSIs, with dramatic decreases occurring following implementation of a programme targeted at vascular access care.[8] A Belgian retrospective study of CRBSI in three ICUs of Brugmann University Hospital, published in 2013, showed CRBSI rates as high as 2.95, 1.13 and 1.26 per 1 000

estimated catheter days. The authors identified Staphylococcus epidermidis to be the most frequent causative organism.[9] A UK study conducted in an acute general hospital, in the adult medical and surgical nine bedded ICU for 4 years, monitored CRBSI before and after interventions were introduced. Following interventions, the annual CRBSI rate fell from 3.4 to 0/1000 patient days with zero episodes during the final 19 months of the study. The authors describe a significant reduction in CRBSI for the first time in a UK ICU.[10] A Swiss prospective interventional study on 2009 similarly showed, that the incidence of CRBSI decreased from 3.9 per 1000 catheter days in the preintervention phase to 1.0 per 1000 catheter days in the intervention phase ($p < 0.001$).[11] Other studies have also reported a high rate of CRBSI.[12-16]

In 2010 a three months pilot study was conducted in 11 critical care units of nine Irish hospitals where 17 CRI were diagnosed. In 2012, a national point prevalence study of hospital acquired infections and antimicrobial use was conducted in 50 Irish hospitals. BSI defined by HELICS criteria showed prevalence of 5.1%. Of the 11 BSI reported from patientsadmitted to critical care units, five were secondary to an infected indwelling vascular catheter. [17] Concordance was found between US and European definitions of BSI.[18] Very interesting results were presented by authors of an Irish multi-centre surveillance study, published in 2013. It involved 614 patients from 8 major teaching hospitals across the Republic of Ireland. Catheter related infections (CRI) rate was 2.2 per 1000 CVC days (95% confidence interval). Pathogens causing the 17 CRI episodes were: coagulase-negative staphylococci (n=6), Candida albicans (n=4), Klebsiella species (n=2), vancomycin-resistant enterococci (n=2), vancomycin-susceptible enterococci (n=1), methicillin resistant Staphylococcus aureus (n=1) and methicillin sensitive Staphylococcus aureus (n=1).[19]

A threshold of CLRBSI rate in ICU in OLOL hospital was found as low as 0.93/1000 central line days and CLABSI rate was 0 per 1 000 central line days. The results are consistent with background of enthusiastic IPCT and the ICU teams in OLOL Hospital. ICU environment was supportive to infection prevention and control interventions and audits. However, there are further interventions needed in the field of insertion bundles, maintenance and removal bundles as well as implementation of 2% chlorhexidin in 70% isopropylalcohol use for skin asepsis, as advised by the Irish national guidelines. In the future HELICS programme will facilitate use of standard surveillance methodologies and analysis.

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A Patient Reported Outcome Measure (PROM) Assessing Quality of Care in the Urology Hospital Outpatient Setting

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Abstract
A prospective blind PROM (patient reported outcome measure) study performed in our urology department examined the outpatient-clinic experience. 104 questionnaires were completed. 23 patients (22%) felt the waiting times for appointments was excessive. 13 patients (13%) experienced difficulty in contacting administrative staff. 98 patients (94%) considered the waiting areas good but 31 patients (31%) considered lack of privacy an issue. Consultants saw 65 patients (63%). 62 patients (60%) expected to be seen by a consultant. 32 patients (31%) felt consultation with a different doctor on return visits was unsatisfactory. 76 patients (73%) "fully trusted" their doctors. 78 patients (75%) rated their visit excellent, 10 patients (10%) added comments. Despite frustration with waiting times, the experience of patients reflects a positive rapport and trust between patient and doctor.

Introduction

Patient reported outcome measures determine the impact of therapies on patients' quality of life[1]. Clinicians and health managers may consider patient interaction successful but the patient's perspective may differ[2]. A PROM may measure any treatment, intervention or interaction, the patients' opinion is central. The usefulness of PROM rests on its design, patient co-operation, and the response to the outcome[3]. Considering the high turn over of patients in our outpatient setting, a PROM was used to assess the patients' perspective after their encounter.

The patient-physician relationship is constantly developing. Patients' expectations continue to increase, as is patient education. Medico legal pressures mandate that doctors fully inform patients. Perceived inadequacies and alleged errors in the media, inadequate staffing levels, and budgetary constraints threaten the patient-doctor relationship. New patients may have preconceived opinions of the health care system[4]. Factors influencing these opinions include previous experiences or media coverage[5,6]. Trust and satisfaction are closely related in quality assessment. Satisfaction reflects previous experiences, trust is based on future care[7]. Measurement of trust is recommended for monitoring the performance of health care systems[8]. This department previously highlighted the proportion of patients (25%) failing to attend outpatient-clinics[9]. Causes included forgetting appointments and various social and personal issues. Recent HSE data in the media highlighted the high (25%) non-attendance rate in outpatients nationwide and the waste of resources. A further publication from this department confirmed a phone text reminder service reduced non-attendance rates from 25% to 15%[10]. This study assessed patients' assessment of their quality of care. By identifying deficiencies, we aim to maximise the doctor-patient interaction.

Methods

A prospective blind PROM study was performed in the urology outpatient department. Staff includes four consultants, five registrars, one senior house officer, six urology and five specialist-nurses. The unit receives 100 new referrals each week, and 200 attend clinics weekly. 400 cystoscopies and other procedures are performed in the outpatients monthly. This high level of activity renders the unit well suited for this study. A multi-item scale questionnaire (46 questions) addressed; 1) Demographic data; 2) Appointment booking system; 3) Hospital clinic design and functionality; 4) Clinical registration logistics; 5) Role of the nurse; 6) Consultant V's non consultant delivered service; 7) Quality of medical consultation (duration, communication, trust); 8) Overall satisfaction suggestions for improvement. A pilot study tested patient compliance and clarity of questions. Patients from nine clinics were randomly chosen over 3-months. Independent staff invited patients to complete the questionnaire on leaving the consultation room. Doctors, nurses and ancillary staff were blind as to which patients were included and were unaware when the study was in progress.

Results

104 questionnaires were completed, 42 patients declined to participate. 80% of respondents were aged 40 to 80 years, 75% were males. The majority were Irish, only four from non-EU countries. For new patient visits (22%), average wait time for a new appointment from referral was; less than 3 months in 40% of patients, 3-6 months in 35%, 7-12 months in 11%, and more than 12-months in 14% of patients. 22% of patients felt the waiting time for their appointment was unacceptably long. 13 patients (12%) experienced difficulty in contacting administrative staff prior to their appointment.

The majority (94%) considered the outpatient waiting areas good or satisfactory but 31% considered lack of privacy an issue during registration. The average time from arrival to secretarial completion of registration was 19 minutes. Four patients considered this unacceptable, 3 patients considered staff could be more welcoming. After registration, waiting time until medical consultation (not measured for logistical reasons) was deemed satisfactory by 90%. All felt the consultation room was fit for purpose, 5 considered it lacked privacy. 47% were more comfortable with a nurse present during their consultation, 4% were less comfortable, 49% considered it made no difference (all males less than 59 yrs age). Consultants saw 63% of patients, registrars saw 27%, and 10% were seen by both. 60% of patients expected to be seen by a consultant. 31% felt that consultation with a different doctor on return visits was unsatisfactory, 16% thought it was preferable. One patient stated that for "male" problems the doctor should be male. Four patients (3%) felt their consultation was too brief (7 mins), 1 considered their consultation too long. The remainder thought the duration satisfactory.

Considering doctor's communication skills, over 90% responded that listening, language and non verbal communication skills (eye contact, nodding and gesturing) were good or very good. One individual felt the doctor's non verbal communication skills were poor, none believed them unacceptable. 3% had difficulty understanding their doctor's accent and 10% reported their doctor used excessive medical jargon. 95% reported the doctor's understanding of their problem was good/very good and 5% satisfactory. 86% responded their problem had been dealt with well or very well. None considered their problem was inadequately addressed. 87% claimed they understood their condition better after consultation. 73% reported they fully trusted their doctor's opinion, 26% said they "mostly did", one patient only "somewhat trusted" the doctor's assessment. All but one affirmed they would return to the clinic. 75% gave an overall rating of their visit as excellent and 16% a rating of satisfactory. No one described their experience as poor/unsatisfactory. Only 10% added comments to the questionnaire, most related to shorter waiting times.

Discussion

The usefulness of a PROM study relies on its design, patient co-operation and the response of staff to its outcome[11]. Regarding co-operation, 42 patients declined. Pressure to get public

transport was the principle reason. In this hospital many patients do travel long distances as there is no local urological facility. Overall, accrual in this study was satisfactory by external standards[12] and would not have improved using methodology such as postal questionnaire or by phone. Due to the numbers of new referrals to our outpatient department, appointments are prioritized. Category A includes patients with cancer diagnosed or suspected and acute conditions. Category B includes those with urinary tract symptoms, urinary infections etc. Category C includes those for elective vasectomy, erectile dysfunction etc. The majority of patients (75%) were seen within 6 months but the level of dissatisfaction with time to appointment (22%) was significant. Patients found difficulty in contacting our department by phone reflecting pressure on clerical staff. A number had appointments rearranged due to overbooking with urgent cases. Limited space explains the perceived lack of privacy in the reception areas.

If the success of a PROM study is dependent on a response from those delivering healthcare, some of the above deficiencies can only be corrected by hospital management or by government policy. Additional consultant urologists have been appointed in specific hospitals but the Irish consultant quota remains below European norms. Also, if we wish to increase outpatient numbers we must be cognisant that at local level administrative staff are under pressure with current numbers. Those who found the presence of a nurse during consultation uncomfortable may reflect embarrassment at discussing intimate details and may explain the suggestion from one patient there should be a male doctor for male issues. There was frustration among some because they see different doctors on repeat visits, potentially damaging the patient doctor relationship. However, less than a third found this unsatisfactory and a minority saw it as a positive factor. Indeed while 60% of respondents expected to be seen by a consultant, this is impossible due to patient numbers. Also, that patients' target for consultant delivered care was surpassed (63% seen by consultant, 27% by trainee and 10% by both). The reported deficiencies in nurse patient and doctor patient interactions are amenable to correction. Patients could be asked if they prefer a nurse present. Patients could be given the opportunity to request the same doctor as on previous visit. The concept of a total consultant delivered service, however, remains impractical in a publically funded healthcare system. The majority of patients were satisfied with the duration of their consultation and felt they understood more of their condition. 10% thought their doctor used excessive medical jargon, a more common issue than language barrier (only 3%). In this unit, 5 of 10 medical personnel are non European and consider English not their first language. To improve patients' education, we supply leaflets relevant to specific conditions. Regarding ongoing professional development, the results emphasise we must simplify medical language and improve communication skills.

This study aimed to determine if weaknesses within the system undermine trust between doctor and patient. Anecdotally patients sympathise with doctors in busy clinics with large numbers of patients. Research tools for evaluating elements involved in the level of trust between doctors and patients are poorly defined. Despite frustration with waiting time for appointments and registration times, the positive experience of patients reflects a positive rapport and trust between patient and doctor.

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Using Lateral Radiographs to Determine Umbilical Venous Catheter Tip Position in Neonates

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Abstract
We aimed to assess the difference in measurement of the distance of the UVC tip from the diaphragm between (Anteroposterior) AP and lateral radiographs and to determine the reliability of the measurement of UVC tip distance from the diaphragm between the two views. A retrospective review of paired AP and lateral radiographs taken to assess UVC tip position was carried out in 25 infants was conducted and reliability analysis was carried out. There was a significant difference in the mean (SD) distance of the UVC catheter above the diaphragm between the AP and lateral radiographs: 8.7 (7.8) mm versus 11.6 (7.3) mm (p=0.003) respectively. Measurements using lateral radiographs were more reliable (Intraclass correlation coefficient: 0.99 vs. 0.93). Inter-observer reliability analysis yielded similar results. Lateral radiographs are more reliable in measurement of UVC tip position and should be performed in conjunction with AP films to aid in determining UVC position.

Introduction

Umbilical venous catheters (UVC) provide vascular access for neonates in the first few days of life for administration of parenteral nutrition, fluids and medications. The ideal position of the UVC tip is the right atrial / inferior vena cava (RA/IVC) junction, which lies just above the diaphragm. Currently, anteroposterior (AP) radiographs are commonly used to determine catheter tip position in relation to the diaphragm. However, reliance on this view alone may lead to an incidence of catheter tip mal-position of up to 75%[1]. AP films are not ideal in determining the landmarks required to assess line position for several reasons**:** The IVC passes through the diaphragm posterior to and lower than the dome of the diaphragm. Therefore using the superior border of the diaphragm to identify the RA/IVC junction may be misleading. The tip of the UVC may be difficult to appreciate due to the projection of the catheter over the vertebrae. It may be difficult to accurately assess where the medial border of the diaphragm is as there is no clear distinction between the cardiac shadow and the diaphragm.

All these factors may contribute to the difficulty in accurately determining the relationship of the UVC tip to the diaphragm. This will also have implications for further catheter manipulation. UVC mal-position can lead to major morbidity and mortality related to complications such as: liver abscess and necrosis, perforation into the peritoneal cavity, thrombus formation in the liver vessels and heart, cardiac arrhythmias, pericardial or pleural effusions or lung abscesses[2,3]. Lateral radiographs demonstrate the level of the diaphragm in a much clearer manner (Figure 1)[4]. There is evidence that lateral radiographs provide a clearer view of the peripherally inserted central catheters (PICC)[5,6]. In our unit, we introduced into our clinical practice lateral radiographs in addition to AP to determine UVC catheter tip position in relation to the diaphragm in November of 2012. In this study, we aimed to assess the difference in measurement of the distance of the UVC tip from the diaphragm between AP and lateral radiographs. In addition we aimed to determine the intra- and inter-observer reliability of the measurement of UVC tip distance from the diaphragm between the two views.

Methods

Any infant requiring an umbilical venous catheter between November 2012 and March 2013 was eligible for inclusion. Anteroposterior radiographs were performed on infants following insertion of umbilical venous catheters. Insertion distance was calculated based on the infants' weights using an accepted formula. UVCs were sutured in position once the AP view confirmed the catheter tip was not in the liver. A lateral radiograph was taken after confirming clinically that the catheter had not migrated between radiographs. The distance from the catheter tip to the level of the diaphragm was measured for each infant using both views. Measurements were performed offline using Fujifilm, Synapse (PACS software version 5.1.24-9). The ruler function was used and the measurement was initiated from the tip of the catheter towards the diaphragm.

If the tip was above the diaphragm, the measurement was given a positive sign. A negative sign was given if the tip was below the diaphragm. Radiographs were viewed using the same monitor and views were optimized by adjusting window level and image magnification to improve accuracy of measurements. Measurements were calculated two weeks apart by one observer to assess intra-observer reliability and avoid recall bias. A second observer performed a set of measurements blinded from the other measurements. Patient demographics including gestation and birth weight were collected. This retrospective project was approved by the Audit and Quality Improvement department of our institution. Normality was assessed using a histogram representation of the data and the Shapiro-Wilk test. Data were presented as mean (standard deviation) if normally distributed and median [inter-quartile range] if skewed. Means were compared using a paired t-test. Intra and inter observer reliability of UVC distance measurements between AP and lateral radiographs were assessed using the intraclass correlation coefficient (ICC) version 2,1. Bland-Altman analysis was used to assess the bias and the 95% limits of agreement between the measurements. We accepted a p value less than 0.05 as significant.

Results

Thirty infant radiograph pairs were assessed. Five were excluded due to a catheter manipulation occurring between the acquisition of the AP and lateral radiograph. Twenty five infants with a median [IQR] gestation and birth weight of 27.5 [26.4 – 32.6] weeks and 960 [755 – 2370] grams respectively were included in the analysis. The median time between the acquisition of the AP and lateral radiographs was 16 [9 – 20] minutes. When compared to the AP films, catheter tip measured on the lateral radiographs was deeper (above the level of the diaphragm) than the AP measurement in 17 infants (68%). The distances measured ranged from 4.6 mm below the diaphragm to 12.7 mm above the diaphragm. There was a statistically significant difference in the mean (SD) distance of the UVC catheter above the diaphragm between the AP and lateral radiographs: 8.7 (7.8) mm versus 11.6 (7.3) mm ($p=0.003$) respectively.

Measurement using the AP radiograph under-read the UVC tip distance above the diaphragm by a mean (SD) of 2.9 (4.3) mm when compared with the lateral radiograph. Measurements using lateral radiographs were more reliable when compared with AP films, with an intra-observer ICC (95% confidence interval) of 0.93 (0.57 – 0.97, $p < 0.001$) for AP and 0.99 (0.98 – 1.0, $p < 0.001$) for lateral radiographs. Inter-observer reliability analysis yielded similar results favouring the lateral radiographs (AP ICC: 0.93 [0.84-0.97, $p < 0.001$], Lateral ICC: 0.99 [0.97-1.0, $p < 0.001$]). The intra-observer repeated measurements bias and limits of agreement were higher in AP compared with lateral radiographs: 2.14 (-1.92 – 6.20) mm versus 0.16 (-1.74 – 2.06). Inter-observer bias assessment yielded similar results favouring the lateral radiographs [1.37 (-4.20 – 6.94) mm versus 0.95 (-1.32 – 2.40) mm].

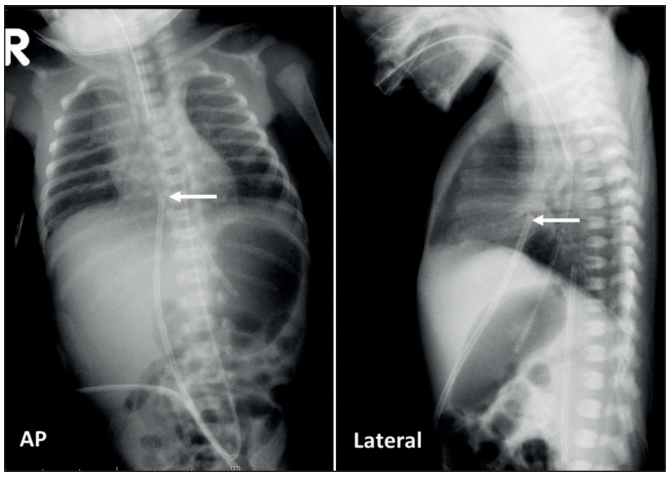

Figure 1 AP and lateral radiographs of the same infant demonstrating differing UVC tip position (white arrows). There was no catheter manipulation carried out between the two films. AP: Anteroposterior; UVC tip appears to be at level of diaphragm. Lateral view shows that tip is in fact 18 mm above diaphragm. The diaphragm can be more clearly identified in the lateral film.

Discussion

We demonstrated that lateral radiographs are more reliable in representing the relationship between the catheter tip and the border of the diaphragm when compared with AP films. In addition, AP radiographs tend to under-read the UVC tip distance above the diaphragm by about 3 mm. Although this under-reading is arguably small, it is very relevant in preterm infants and can result in the tip being inadvertently placed in the right or even the left atrium. In a study using echocardiography to assess UVC tip

position following confirmation on AP films, 28% and 45% of UVCs deemed in good position on AP films were in the right and left atria on echocardiography respectively[1]. The study also identified that the use of lateral radiographs can lead to UVC placement within the heart. However, they fared better than AP films. Ultrasonography should therefore be ideally used to confirm UVC and PICC placement[7,8]. This however is not feasible in all centres as it requires expertise in neonatal echocardiography and may not be available 24 hours per day. As a result, reliance on radiographs to determine catheter positions will remain standard of care for the foreseeable future. Measurement of the distance between the tip and the diaphragm is more reliable when using lateral radiographs with less intra and inter observer variability between the repeated measurements when compared to AP films. This is of particular importance in centres where the person inserting the UVC remains at the bedside in a sterile environment while receiving instruction from another colleague reviewing the radiographs and providing instruction on line manipulation distance.

The more accurate appraisal of the tip position using lateral films may result in fewer post insertion manipulations and reduce the overall number of radiographs taken. This may result in a reduction of the radiation burden these infants are exposed to. AP films remain necessary during the initial assessment to ensure that the catheter has not coursed medially or laterally into a hepatic vein as this may be difficult to establish on lateral films. We suggest that lateral radiographs may be a useful in conjunction with AP films to aid in determining and manipulating UVC tips. In addition, following manipulation, we recommend the use of lateral radiographs alone to assess UVC tip distance.

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Response to "Desperate for a Hot Shower"

Sir

We read with interest the letter by Conway et al regarding cannabinoid hyperemesis[1]. We have recently had a patient in his late twenties under our care that we believe may also have been suffering from this syndrome.

The patient presented to the Emergency Department with a two day history of severe periumbilical pain, associated with persistent bilious vomiting. He was apyrexial and haemodynamically stable. Inflammatory markers were within normal limits. He admitted to a recent alcohol binge but denied using illicit drugs. Examination revealed tenderness in the right upper quadrant and epigastrium with mild guarding. Following a similar episode of pain two years prior to this presentation the patient had been diagnosed with gastritis and treated with a short course of proton pump inhibitors (PPI). Five weeks prior to the index admission, he had been admitted overnight with periumbilical pain and bilious vomiting that had resolved following PPI administration.

On this admission, it was suspected that the patient might have pancreatitis or a duodenal perforation, however computed tomography of the abdomen was reported as normal, revealing no evidence to support these diagnoses. Mild oesophagogastritis was found at upper gastrointestinal endoscopy. Intravenous PPI therapy was commenced. His symptoms improved over the following three days and he was discharged with an appointment for repeat endoscopy six weeks later.

The patient re-presented the following day as his symptoms had returned. An erect plain film of the chest again failed to support a diagnosis of perforation. His symptoms continued unabated for the following week. Nasogastric feeding was commenced. MR enteroclycis ruled out small bowel pathology. Computed tomography of the brain failed to reveal a lesion that might have prompted his symptoms. The patient's next of kin was contacted in order to determine if there were any psychosocial factors that might have induced his symptoms. It was revealed that the patient was a habitual user of cannabis, smoking on an almost daily basis. It was also brought to our attention that the patient showered multiple times per day, as he found that this relieved his symptoms, a feature also noted in the case described by Conway et al[1]. A working diagnosis of cannabis withdrawal was suspected, which was revised on reading the aforementioned case report. The patient's symptoms gradually improved and he was discharged, after an almost three week long in-patient stay.

Our case, and that described by Conway et al, highlight the difficulties in managing these patients. As noted in both cases, while symptoms are sufficiently robust and intractable to necessitate multiple investigations, these will typically be normal or reveal mild upper gastrointestinal inflammation out of keeping with symptom severity. Given the prevalence of cannabis use in Ireland, it is likely that a significant proportion of patients suffering from cannabinoid hyperemesis are misdiagnosed and consequently over-investigated[2]. Although it will likely remain a diagnosis of exclusion, careful history-taking, including collateral histories from family members and peers, and recognition of tell-tale symptom relief by showering, might prevent unnecessary diagnostic studies[3,4].

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Intra-Hepatic Haemorrhage and Shock during Post-Natal Period, in Two Brothers with Haemophilia

Sir

Haemophilia rarely presents with severe visceral haemorrhage in the first week of life. A 15 hour old boy presented with haemorrhagic shock and coagulopathy. He was diagnosed with liver haemorrhage and severe haemophilia A. His younger brother, diagnosed with haemophilia at birth, presented with shock due to liver haemorrhage at 79 hours.

Case Reports

A boy, born at term by vaginal delivery, developed coagulopathy and hypovolaemic shock at 15 hours. pH was 6.66, lactate 21 mmol/l, haemoglobin 8.9 g/dl, platelets 178x10^9/l, APTT 245 seconds, PT 21 seconds, fibrinogen 0.9 g/l. He was ventilated and received O-negative blood, plasma, vitamin K, antibiotics and inotropic support. He responded to treatment and was extubated after eight hours. Coagulation normalised but he required further blood and platelet transfusions. He developed abdominal distention with hepatomegaly. Ultrasound images suggested a hepatic tumour with haemorrhage into the tumour and the peritoneal cavity (Figure 1). He required further blood and platelets transfusions. By day thirteen, the ultrasound appearances were consistent with a resolving hematoma. Repeated coagulation screens showed prolonged APTT. Factor VIII level of <0.01 IU/ml confirmed a diagnosis of haemophilia A.

Two years later a brother was born at term by vaginal delivery. Factor VIII level was <0.01 IU/ml at birth. At 79 hours, he developed abdominal distention, hepatomegaly and haemorrhagic shock with haemoglobin 6.8 g/dl, pH 7.08, lactate 18 mmol/l and an unrecordable APTT. He was ventilated, and received O-negative blood, recombinant factor VIII and intravenous vitamin K. Ultrasound showed a hematoma in the right lobe of the liver with intraperitoneal haemorrhage. He responded to treatment and was extubated after five hours. Neither infant had evidence of intracranial bleeding.

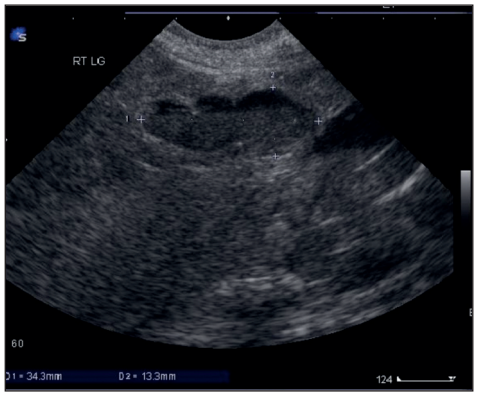

Figure 1

Older brother's (Case 1) initial ultrasound image showing cystic area with fluid-fluid level within it

Discussion

Coagulation factors are synthesised in the foetus from 10 weeks gestation. While levels of some coagulation factors are low at birth, factor VIII level is within the adult range[1]. Sepsis or ischaemia can derange coagulation. Nevertheless, factor VIII or IX deficiency should be suspected in any newborn with an isolated or disproportionately prolonged APTT. Haemophilia rarely presents with severe haemorrhage in neonates. When the family history is known, the diagnosis is made on cord blood. Between 37% and 68% of patients are diagnosed in the first month of life, with the higher presentation rate associated with circumcision[2,3]. The commonest presentation is intracranial or extracranial haemorrhage (41%)[4]. The remainder of cases present with bleeding from puncture sites, umbilical cord, or following circumcision. Only 2.5% of cases present with haemorrhages into visceral organs, usually the spleen[4]. In the three described cases of liver haemorrhage in neonates[5,6], symptoms developed 11 to 72 hours after vaginal delivery at term. We report the first known cases of haemophilia presenting as intrahepatic haemorrhage in the neonatal period in brothers.

The rapid correction of the coagulopathy, deranged liver function indices and the imaging suggestive of a liver tumour delayed diagnosis in the first case. Hepatic haematomas can be difficult to differentiate from other lesions with ultrasound and CT[7]. Our experience demonstrated the importance of considering alternative diagnoses in infants presenting with unusual clinical and radiological findings.

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Body Fat Distribution in Turner Syndrome and the Influence of Puberty

Sir

Girls with Turner syndrome (TS) may encounter a wide range of problems. We aim to describe the body composition and its relation to the pubertal development, in affected girls. Precocious pubarche has been found to be associated with excess total body and central fat mass throughout all pubertal stages[1]. Early menarche has impact on body fatness[2]. In girls with TS, growth hormone (GH) was associated with favourable changes in body composition[3]. The consensus, with respect to the association between body composition and pubertal development, has still not been reached in those with TS. We therefore set out to determine the body fat distribution in Irish girls with TS who have attained with breast Tanner stage 2 or more with or without menarche. The influence of pubertal development on fat distribution was also examined. The fat mass of the total body, trunk, arms, and legs was estimated by dual-energy X-ray absorptiometry. Fisher's Exact test or Mann-Whitney U test was used to compare groups and correlation was assessed using the Pearson's or Spearman method, where appropriate.

Table 1 Fat distribution with respect to pubertal development

	Breast Tanner stages			Breast Tanner stage more than 2 with or without Menarche		
	Stages 2-3	Stages 4-5	P value	Breast Tanner stage 2 or more without menarche	Post-menarchal	P value
Arm fat mass [mean (SD)] (kg)	1.86 (0.70)	2.77 (1.44)	0.04	2.23 (1.11)	2.33 (1.30)	0.83
Leg fat mass [mean (SD)] (kg)	7.05 (2.85)	9.52 (5.63)	0.15	7.97 (3.90)	8.46 (5.21)	0.78
Trunk fat mass [mean (SD)] (kg)	6.92 (3.39)	12.61 (6.72)	0.01	9.77 (5.63)	9.33 (6.34)	0.85
Total body fat mass [mean (SD)] (kg)	16.93 (6.51)	25.71 (13.70)	0.04	20. 72 (10.51)	21.34 (12.35)	0.89

Of 33 TS girls with breast Tanner stage 2 or more, with or without menarche, 30 (mean age 16.45; SD 2.34 years) agreed to participate, of whom 17 (56.7%) were postmenarchal. Oestrogen therapy was received by 18 of 30 (60%) girls, of whom 10 (55.55%) had completed pubertal induction. The majority of girls (26/ 30; 86.7%) received GH therapy. Mean fat mass at arm, trunk and total body, but not leg, was significantly higher in TS girls with breast tanner stages 4-5, compared with those with stages 2-3 (Table 1). However fat distribution did not differ significantly between girls with breast Tanner stage 2 or more without menarche and postmenarchal individuals (Table 1). Height or age was not significantly correlated with fat mass at arm, leg, trunk or total body (p value >0.05).

In conclusion, it seems that breast Tanner stages, but not menarchal status, influence body fat distribution in girls with TS. This highlights the importance of discussing the influence of pubertal development, in particular breast development, on body fat distribution in this patient group.

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Sun Protection Awareness and Practice Among an Adult General Practice Population

Sir

Skin cancer is the most commonly diagnosed cancer in Ireland and numbers are continuing to increase year on year.[1-3] 90% of skin cancer is preventable with optimal sun protection. Our aims were to assess patients' knowledge of sun protection, level of sun exposure and sun protection practices and to examine any correlations between these variables. A cross-sectional validated questionnaire-based study involving 3 mixed rural-urban general practice populations in the Munster region was undertaken, with ICGP Ethical Committee Approval.

The approximate combined total population of the 3 practices was 11,000 patients. The computer patient databases were used to generate a randomised patient sample of patients over the age of 18 years. The sample size was calculated based on a cut off p-value of 0.05, power values of 0.75 to 0.80, and effect size of 0.2-0.3. Based on these calculations an estimated sample size of 180 patients was required. A validated questionnaire which was developed in the United States and published in 2012 entitled the Sun Exposure and Behaviour Inventory was used and piloted. This questionnaire was posted to 440 randomly selected patients with a stamped addressed return envelope enclosed. The questionnaires were completed anonymously. 200 (45%) were returned and the data was encoded and entered into SPSS and stored on password protected laptops of the researchers. The study was funded by the 3 researchers and there are no conflicts of interest to declare. The study found that knowledge was high with over 180 responders (90%) scoring moderate – high in knowledge scores. 114 people studied (57%) report lifetime sun exposure to be moderate to very high.The majority of the sample studied reported having had sunburn 1 to 10 times. Sunburn which blistered, was experienced by 70 (35%) of our responders 1 to 3 times in their life. 175 responders (75%) report never having used a sunbed. 124 people (62%) use sunscreen with 128 people (64%) using SPF 15 or higher. Sunglasses are commonly used with 134(67%) of responders using this method regularly. Long-sleeved shirts are worn regularly by 173 (86.5%) of responders. Almost equal number of responders do not seek/rarely seek shade as use it regularly. However 27 people (13.6%) used no sun protection at all; and 5(2.5%) of the responders use the optimal five combination sun protection methods recommended by the World Health Organisation and Irish Cancer Society.

In conclusion, this study found while adult patient knowledge levels regarding sun protection were encouraging, sun protection practices were sub – optimal, and indicate a need for further health promotion to reduce the skin cancer burden of Irish adults in the future. From a general practice point of view, it points towards the need for more health promotion and education. We hope that this study will encourage more GPs to take a more active role in promoting skin cancer awareness among the general public.

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Congenital Diaphragmatic Hernia Surveillance

Sir

Congenital Diaphragmatic Hernia (CDH) is a rare congenital disorder as a result of deficient development of the diaphragm with resultant herniation of abdominal viscera into the thoracic cavity, mal-development of the alveoli and pulmonary vessels[1,2]. The incidence of CDH – ranges from 1 in 2,000 to 1 in 15,000 births[3]. Due to the legislation in Ireland against termination of pregnancy it was suggested that there may be an increased incidence of CDH. There is no mandatory reporting of CDH cases in the Republic of Ireland (ROI) and Northern Ireland (NI). Voluntary case reporting to the Irish Paediatric Surveillance Unit (IPSU) started in January 2010.

Data on the CDH cases reported to the IPSU between January 2010 and December 2011 were collated and analyzed by the authors in order to determine the true incidence of CDH in the ROI and NI. This is hoped to enable the health service to plan services that would benefit children with this condition more effectively. Medical professionals reported new CDH cases to the IPSU using a pro-forma. The IPSU in turn notified the authors of the new case reports and passed on the health professionals' contact information. The health professionals were sent a CDH questionnaire developed by the authors using a self-addressed envelope. These questionnaires were completed and returned. Information collected was entered into Microsoft Access database and were analyzed using the SPSS version 20 (IBM). The questionnaire was completed in half of the cases. Twenty three (23) cases were reported to the IPSU within the two year period 2010 and 2011. This comprised of 10 cases in 2010 and 13 in 2011. Eight of the 23 cases were from NI while 15 cases from the ROI. The incidence rate in the 2 years using the IPSU figures was 12 per 100,000 live births or 0.12 per 1000 live births per annum. However Hospital in Patient Enquiry (HIPE) record in one of the three surgical centres indicated that only 6/15(40%) cases managed in that centre in the 2-year period were reported to the IPSU.

In conclusion it was difficult to determine the true incidence of CDH using the IPSU data due under-reporting. Increased reporting maybe enhanced by increasing the awareness of the IPSU to all health professionals caring for children.

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Medical Students' Views on Selection Tools for Medical School - A Mixed Methods Study

L Stevens, ME Kelly, M Hennessy, J Last, F Dunne, S O'Flynn. Ir Med J. 2014; 107: 229-31.

Question 1
The response rate to the questionnaire was

a) 57%
b) 67%
c) 77%
d) 87%
e) 97%

Question 2
The proportion of Irish Students in the study was

a) 41.5%
b) 51.5%
c) 61.5%
d) 71.5%
e) 81.5%

Question 3
The proportion of the students who had entered medicine directly from secondary was

a) 65%
b) 70%
c) 75%
d) 80%
e) 85%

Question 4
The proportion of students in favour of interviews was

a) 78%
b) 80%
c) 82%
d) 84%
e) 86%

Question 5
The proportion of the students who felt that section 3 of the HPAT was not well designed was

a) 30%
b) 32%
c) 34%
d) 36%
e) 38%

A National Survey of Implementation of Guidelines for Gestational Diabetes Mellitus

A O'Higgins, F Dunne, B Lee, D Smith, MJ Turner. Ir Med J. 2014; 107: 231-3.

Question 1
The proportion of Units that used the 75g OGTT was

a) 71%
b) 73%
c) 75%
d) 77%
e) 79%

Question 2
The proportion of centres that had not implemented the guidelines in full because of lack of resources was

a) 29%
b) 31%
c) 33%
d) 35%
e) 37%

Question 3
The proportion of units with a multidisciplinary clinic was

a) 43%
b) 45 %
c) 47%
d) 49%
e) 51%

Question 4
The proportion of units with on-site laboratory facilities for HbA1C measurements was

a) 57%
b) 59%
c) 61%
d) 63%
e) 65%

Question 5
The proportion of units who provided a dietetic service was

a) 47%
b) 49%
c) 51%
d) 53%
e) 55%

Imaging of Gunshot Injuries in a West Dublin Teaching Hospital – A Ten Year Review

I Murphy, L Lavelle, E Ni Mhurchu, R McCarthy, E Heffernan. Ir Med J. 2014; 107: 244-5.

Question 1
The mortality for high velocity wounds was

a) 39%
b) 41%
c) 43%
d) 45%
e) 47%

Question 2
The mortality for low velocity wounds was

a) 6%
b) 8%
c) 10%
d) 12%
e) 14%

Question 3
The mean age of the victims was

a) 23.4 years
b) 25.4 years
c) 27.4 years
d) 29.4 years
e) 31.4 years

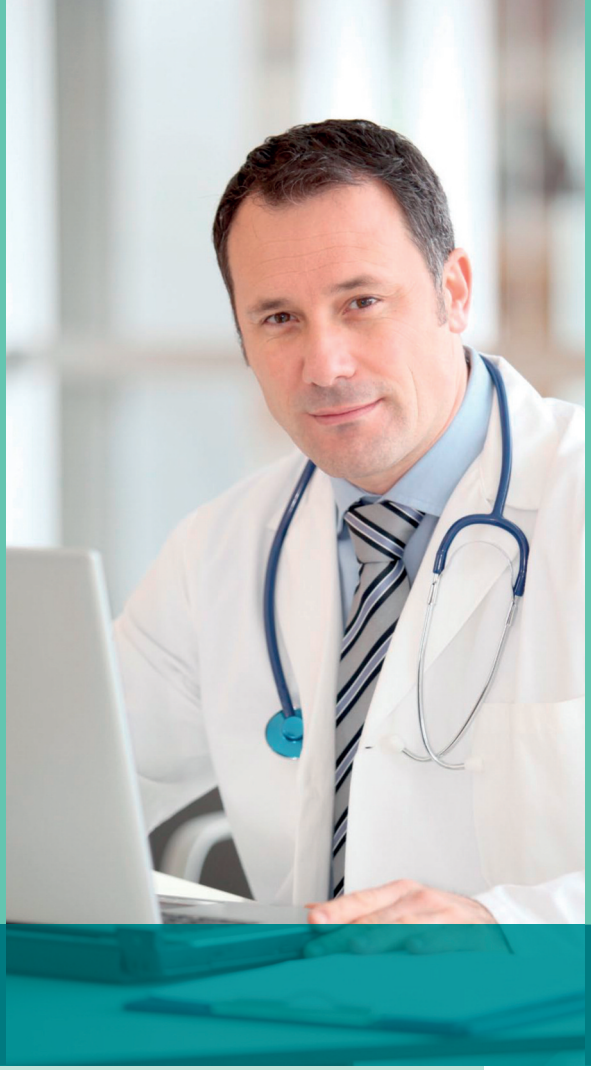
Question 4
The number of victims who died in the ED department was

a) 4
b) 6
c) 8
d) 10
e) 12

Question 5
The number of victims who had CT scans in the emergency setting was

a) 11
b) 13
c) 15
d) 17
e) 19

KEY DATES FOR 2013 TAX RETURNS



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