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Percutaneous Computed Tomography-guided Oesophageal Needle Biopsy

Sir

Biopsies of suspicious lesions in the oesophagus can be readily performed via a flexible endoscope in most settings. However, structuring lesions may require a rigid endoscope under general anaesthesia or a percutaneous approach to successfully biopsy. The percutaneous approach however, is rarely used with upper gastrointestinal tract lesions. We describe the fine needle aspiration (FNA) of a cervical oesophageal lesion via a percutaneous computed tomography (CT)-guided approach. A 60 year-old-male presented with progressive dysphagia over several weeks.

He had a history of oesophageal carcinoma which was treated by partial oesophagectomy and radiotherapy six-years previously. Oesophagogastrroduodenoscopy demonstrated a stricture in the upper oesophagus; however multiple attempts to pass and biopsy the stricture endoscopically were unsuccessful. CT of the neck showed circumferential mass-like thickening of the oesophagus between C6-T1 vertebral levels. A biopsy of the stricture was required to differentiate between a benign stricture and recurrence of malignant disease. In view of previous unsuccessful attempts at endoscopic biopsy, percutaneous FNA of the oesophagus was performed under CT fluoroscopic guidance. The procedure was performed under conscious sedation and local anaesthesia with the patient placed supine with the neck held in left lateral rotation. Under aseptic technique, a 22-gauge x 9 cm spinal needle was advanced via a right posterolateral supraclavicular approach with the needle traversing between the

right internal jugular vein and common carotid artery in the carotid sheath anteriorly and the right vertebral artery and vein posteriorly (Figure 1A). The needle trajectory was then horizontally angulated and advanced into the oesophageal lesion (Figure 1B) where two FNAs were performed. The procedure was well tolerated with no complications and cytologic examination demonstrated cellular changes consistent with malignancy.

Discussion

Percutaneous access to the upper digestive tract is an unconventional biopsy approach with few reports described in the literature.^{1,2} Percutaneous biopsies of neck structures are challenging due to the presence of numerous vessels, nerves and airway structures. Nevertheless, with careful consideration of the anatomical relationships, two main approaches have been described – the anterolateral approach between the carotid sheath and trachea or the posterolateral approach with the needle passing between the carotid sheath and vertebral vessels (Figure 1A) as described in our case.²⁻⁴ A transtracheal approach may also be used, however this carries additional risks such as aspiration, pneumomediastinum and airway haemorrhage.¹ Additional methods can be employed to increase the working space posterior to the carotid sheath, including contralateral head rotation which moves the carotid sheath anteromedially and hydrodissection to separate out structures at the needle tip prior to further needle advancement. The technique described offers a valuable alternative to rigid endoscopic or open biopsy for difficult upper gastrointestinal lesions as it avoids the need for general anaesthesia and can be performed safely under CT guidance.

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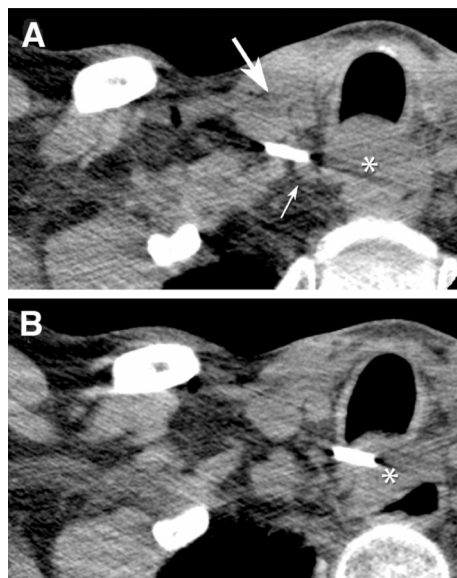


Figure 1

(A) Axial CT fluoroscopic image showing the 22-gauge fine aspiration needle in a posterolateral approach to the carotid sheath (thick white arrow) and to the vertebral vessels (thin white arrow).

(B) Lower axial CT image showing the needle within the oesophageal lesion (white asterisk).

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In this Month's IMJ

Towards a framework for implementing evidence based alcohol interventions: Armstrong and Barry undertook a study in which 888 patients attending 4 emergency departments were screened for harmful alcohol use. The M-SASQ screening tool was used. They found that 345 (36%) of patients needed brief advice and 83 (9%) required referral to specialist services.

	Hospital A Total Number Screened = 381	Hospital B Total Number Screened = 337	Hospital C Total Number Screened = 170	Hospital D Total Number Screened = 56	Total Number Screened = 944
No further intervention required	46% (n=177)	60% (n=202)	41% (n=70)	19% (n=11)	49% (n=460)
Brief advice offered	41% (n=157)	30% (n=101)	33% (n=56)	56% (n=31)	36% (n=345)
Referral to specialist services recommended	11% (n=41)	3.5% (n=12)	12.5% (n=21)	16% (n=9)	9% (n=83)
Declined to take part	2% (n=6)	6.5% (n=22)	13.5% (n=23)	9% (n=5)	6% (n=56)

Safe and judicious paediatric psychotropic prescribing: McNicholas and Orakwue surveyed child psychiatrists, paediatricians and a group of GPs. There were 116 responses. The most commonly used medications were antidepressants (58.7%), antipsychotics ((57.1%) and ADHD drugs (36.5%). An increased amount of drug monitoring such as height, weight, heart rate and blood is being undertaken. This is important because long term stimulant use can slow physical development during puberty.

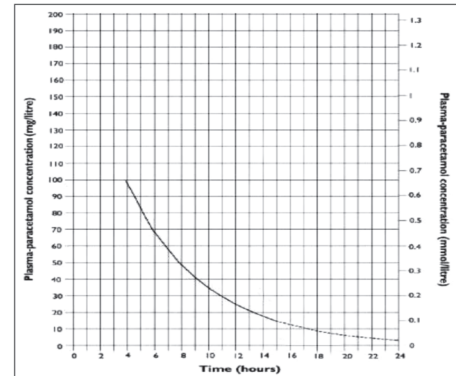
	Total Group n=63	Child Psychiatrist n=39	Paediatricians n=7	General Practitioners n=14	No Profession group given n=3
ADHD Meds (Any)	63.5% (40)	71.8% (28)	71.4% (5)	35.7% (5)	66.7% (2)
Methylphenidate	61.9 % (39)	69.2% (27)	71.4% (5)	35.7% (5)	66.7% (2)
Atomoxetine	27% (17)	41% (16)	14.3% (1)		
Fluoxetine	44.4% (28)	61.5% (24)		21.4% (3)	33.3% (1)
Flx plus any other SSRI	58.7% (37)	66.7% (26)		64.3% (9)	66.7% (2)
Atypical Antipsychotic	57.1% (36)	76.9% (30)	28.6% (2)	14.3% (2)	66.7% (2)

Care of type 2 diabetes in unresourced general practice: current practice in the mid-west: Connor et al examined the care of type 2 diabetes in 12 GP practices. There were 842 patients in the study. The picture was a mixed one. Cholesterol, creatinine, HbA1c and systolic BP were controlled. On the other hand, intervals between foot reviews (60.2%), BMI measurement (52.3%), retinopathy screening (62.0%), and influenza vaccination were too low. The issues raised in the paper need to be explored before handover of routine care of diabetes to general practice.

Clinical Parameter	Documented (as a % total population studied)	Mean Interval since last checked (Days)	95% Confidence Interval (Days)
Albumin: Creatinine Ratio	417 (49.5%)	413	377-449
Foot review	507 (60.2%)	522	480-564
Retinopathy Screening	521 (62.0%)	625	556-693
Influenza Vaccination	643 (76.4%)	499	461-536
Pneumococcal Vaccination	366 (43.5%)	1640	1520-1761

Impact of new UK paracetamol overdose guidelines on patients presenting to the emergency department: Nfila et

al have assessed the predicted impact of the new guideline for the management of paracetamol. They reviewed 74 patients who had previously presented with a paracetamol overdose and applied the new criteria. The new guidelines would



have resulted in an additional 3 patients being admitted. The authors support the new guideline and feel that it will simplify management without causing a significant increase in admissions.

Anorexia Nervosa (AN) in inpatients at a children's hospital 2005-2011: O'Reilly et al describe their experience of children with AN. Among the 20 children 70% were girls. The mean age at admission was 13.5 years and the mean hospital stay was 38 days. The mean BMI on admission was 14.8kg/m² rising to 16.7kg/m² on discharge. Interestingly 35% of the children had undergone recent orthodontic work. Fifty per cent were treated with antidepressants.

	Mean	Female	Male
Age on admission (yr)	13.5	14/20 (70%)	6/20 (30%)
Time of onset prior to admission (mo)	6	13.48	13.52
Admission BMI	6	4.5	8
		0.4th	9th

General practice career intentions among graduate-entry students: A cross-sectional study at Ireland's newest medical school: Lane et al surveyed the career intentions of 139 students. Forty one (29%) stated that GP was their first preference. This was the most popular choice followed by medicine (16%), surgery (11%), paediatrics (9%), obstetrics (7%), emergency medicine (6%), the rest 1-2%. The findings are helpful in informing future manpower planning.

Career Choice	Prior to Graduate-Entry Medicine Number (%)	Current Number (%)
General Practice	26(19)	41(29)
Medicine	11(8)	22(16)
Surgery	10(7)	15(11)
Paediatrics	10(7)	12(9)
Obstetrics & Gynaecology	3(2)	10(7)
Emergency Medicine	7(5)	9(6)
Psychiatry	3(2)	3(2)
Radiology	1(1)	1(1)
Pathology	1(1)	1(1)
Anaesthesia	1(1)	0(0)
Don't Know	66(47)	25(18)
TOTAL	139(100)	139(100)

Epidemiology of high falls from windows in children:

Freyne et al report on 45 falls from windows among young children. In the case of the 2 children who died the falls were greater than 24 feet. Three quarters of the children were under 5 years and there were 3 times as many boys in the series. The authors urge building legislation to safeguard high windows and balconies.

Injury sustained	Number (%)
Head Injury	13 (28.9%)
Fracture	8 (17.8%)
Multiple injuries	6 (13.3%)
Normal child / No injury	6 (13.3%)
Unclassified	4 (0.9%)
Laceration	1 (0.2%)

Medical Trainee Hours in the US

Medical trainee working hours in the US are viewed from a different perspective to Ireland and the EU. Its post-graduate programmes have always been more intense and concentrated. Weinstein et al¹ point out that the restriction in working hours was introduced in 2003 and that it is timely to review the first 10 years in terms of progress and benefit. Irrespective of the health care system the 3 objectives of work-hour limits are patient safety, enhanced learning and the trainee's health and well-being.

The Accreditation Council for Graduate Medical Education (ACGME) is responsible for postgraduate medical training programs within the US. It was established in 1981 and oversees 9,200 residency programs in 133 specialty and subspecialty areas of medicine. In the 2003 directive the ACGME set down that the following standards be put in place for trainees – an 80 hour work week, overnight call no more than every third night, at least 1 day off in 7, breaks between shifts be a minimum of 10 hours, shifts limited to 24 hours of clinical duty plus 6 hours. The directive was further modified in 2011, the main alteration being a 16 hour limit for intern PGY-1 shifts. The Body also pointed out that the learning objectives of the program must not be compromised by excessive reliance on residents to fulfil non-physician service obligations. It is emphatic on the need for adequate sleep facilities and safe transport home for those too fatigued to drive themselves. The only exceptions to the duty hour requirements are reading, self-learning and research. There is also a derogation of up to 10% of the 80 hour limit based on a sound educational rationale.

The recent review was centred on a number of issues. The first was concern was about professionalism as there had been worries that a reduction in hours would adversely affect patient continuity. The group feel that professionalism has not been affected. Trainees are both dedicated to their patients and keen to learn. This hasn't changed over the last decade. On occasions trainees are faced with the dilemma of leaving at the end of a 16-hour shift or staying on to care for a critically ill patient. One of the ways that residents overcome this dilemma is to take work home with them. While not ideal it does demonstrate a sustained commitment to clinical care.

The directives of 2003 and 2011 generated a wide range of responses in the US. The old guard think that the modern resident is working too little to become an accomplished doctor and that work hours are being used as the scapegoat when things go wrong. Others think that you can't be a good doctor unless you have taken personal responsibility for patients over long hours on call. Commentators point out that there should be a clear demarcation between overwork and hard work. This is where the older physicians are incorrect. Overwork is not beneficial to either the trainee or the patient. Furthermore it is not a training experience.

There are studies that suggest that there have been no improvements in patient safety because gains made in some areas have been replaced by problems with transitions in care. Handovers of ill patients from doctor to doctor can be challenging. The relationship between resident working hours and patient care is complex. Also it is pointed out that it is incorrect to assume that the trainee is mostly responsible for

the patient. It is the attending/ consultant who is actually in charge.

On the other hand the trainees have benefited in relation to personal harm including road traffic accidents. They feel less tired and better at coping with work shifts. Getting the balance between supervision and the correct amount of autonomy for the trainee is difficult². A lack of progressive independence during the training years will make resident less well equipped to deal with responsibility later on.

As the concern about trainee fatigue recedes it is being replaced by anxieties about handovers. The conclusion is that doctors have a long way to go compared with their nursing colleagues. It must be appreciated that it is now more important than ever to communicate about an ill patient when one is transferring on. One of the problems is that good handovers take time which eats into the resident's other clinical tasks. It needs to be a formalised procedure. Computer summaries can be helpful but residents do like them because it reduces the opportunity to ask questions.

The impact of shorter trainee working hours on the acquisition clinical skills and experience has been widely debated on both sides of the Atlantic. If a surgeon previously did 1500 cases by time of training completion, will 1200 cases be sufficient in the future. It is likely to put greater pressure on residents to spend a greater proportion of their rotations in large centres. The shorter hours will have to be compensated by greater patient care exposure.

The debate in the US is whether duty hour regulation will follow the EU model or retreat to a more unregulated directive. There is a sense that it depends on the specialty. In highly technical activities fatigue can play an adverse role. The group suggests that the discharge of more low key activities may not require the same degree adherence to working hour restriction. They add that one shouldn't just look at hours as an isolated piece of a complicated equation.

As the Irish health service moves towards EWTD compliance it is worthwhile reviewing the US experience. It certainly appears to be better for the health of the trainee. The benefit to the patient remains unclear. This is in part due to difficulties in determining the best outcomes to measure for patients. It is important that we examine a number of potential outcomes. One important area to include will be patient satisfaction surveys. It is likely that patients will appreciate the difference between a well-rested doctor and a fatigued one. If EWTD compliance improves patients' perceptions of the health service and the care they receive it will have been worth all the effort.

JFA Murphy
Editor

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What We Can Learn From Generational Gaps

No matter what stage you are in your career, we defy you to deny that you have not had at least one of these thoughts recently – “Medical students these days just don’t have the respect for their seniors that we had.” “We need to learn! But when will we get the time!” “Social media has no place in medical education”. “Why can’t I use my laptop in the hospital?” As we moved slowly up the medical career ladder, we have gradually noticed the differences between the generations. These personal observations have been backed by a recent explosion in opinion articles, lectures and research in this area, much of which can help explain the issues and identify the background to the differences in opinion that previously may have frustrated or challenged relationships¹⁻³.

The theory on Generational Gaps is based on the presumption that the life events experienced as a collective at an influential time in youth establishes a view of the world that may then not be understood or even appreciated by those coming before or after. As people work longer, and the differences between generations cycle quicken, an awareness of these generational gaps become more important in order to be able to function more effectively with colleagues and patients. On initial reading some of these theories may be sweeping clichés, but with any cliché there is often a nugget of truth. These theories stick in the mind.

Three to four different generations have been described. The oldest, the Silent Generation, are now mostly retired. Those who are still working deserve praise, but are increasingly less common. The second generation is the Baby Boomers. Born between 1945 and 1965, their collective experiences included the moon landing, civil rights and the introduction of birth control. There were limitless possibilities: anything could be done if the determination was there. While there is some gender bias they would be considered more advanced than their predecessors, where women would rarely have worked outside the home. With baby boomers the job is a major part of the individuals identity, and respect is based on accomplishment. In Ireland, the leaders in medicine are mostly baby boomers.

Generation X, born between 1965 and 1982, often had both parents working outside the home and as a result were more independent. Their collective experiences were that of the Challenger disaster, Chernobyl, the recession of the 1980s. As a result Gen X can be more cynical of government and organization, working to live and not living to work. Some have suggested that reduced allegiance to family and organization may prompt a sense of isolation as well as independence. Gen X are more gender neutral and are represented by junior consultants and senior registrars / SpRs in Ireland.

The Millenials are those born between 1982 and 2002, and represent a generation raised by protective parents with “helicopter” style of parenting, with a fantastic awareness of the use of technology. To them, the world is but a village where everyone is connected no matter where they are living. With increased self-esteem compared to their predecessors, (though the critics may say entitlement), this generation are also characterized by neutrality regarding race and gender. Millenials are global citizens, with increased volunteerism and a casual interpersonal style that may seem impolite to older generations. Their affiliation is to the group rather than the individual.

Where this becomes more interesting is when the generations interact. Classic interactions are the annoyance of a consultant (Baby Boomer) when the medical student (Millenial) stays on a

laptop during lectures or challenges established belief in the middle of a ward round. The Millenial medical student wonders why the Generation X Registrar won’t volunteer to give a tutorial rather than study for their exams. Or –and this is a true example– the Millenial patient asked the Generation X doctors and nurses on a ward round to step outside so as she could check the truth of the information they had provided to her (individualized to her care!) on Dr Google and then post on Rollarcoaster what she thought of it. In their own experience, each person has a valid experience and view. To the other generation, they may be alternately selfish, disrespectful or condescending, none of which are good features in a relationship.

How are these gaps overcome? Well, like most things in life, awareness and discussion in the spirit of mutual respect is crucial. In medical education, awareness of different learning styles helps: Millenials appreciate multiple learning styles, learning at times they choose and using technology. Baby Boomers are more comfortable when they listen and take notes. Generation X may learn most effectively when working on manual activities⁴. All of these styles have been addressed in medical education, from the didactic lecture through skills stations to podcasts. In the spirit of mutual respect, clear rules can be made on the use of technology (it is NOT ok to write about patients on Facebook) while taking advantage of Millenials knowledge of technology. One great example seen recently: the Baby boomer Professors reply to the Millenial Medical students question: “That’s a really interesting question. I’d like you to go and research that and let us all know what you found out” (and then confessing to the Generation X SpR that they didn’t know the answer). Or the medical student using Twitter to survey current practice on implementation of the Surviving Sepsis campaign: a great way to break down traditional barriers and allow communication (as long as the Baby Boomers are on Twitter, that is)⁵.

We don’t know what the next generation will be characterised by, but that we all owe it to our patients, our students and teachers to ensure that we can communicate effectively regardless of the generation we come from. Food for thought?

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Towards a Framework for Implementing Evidence Based Alcohol Interventions

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To receive CPD credits, you must complete the questions online at www.imj.ie.

Abstract

Alcohol is ranked as the eighth leading cause of death globally and is a causal factor in more than sixty major types of diseases and injuries and results in approximately 2.5 million deaths a year¹. This study tested the feasibility of screening and brief intervention (SBI) within four emergency departments. A total of 944 patients were screened for hazardous and harmful alcohol use. The results showed that there was good co-operation from the public with 888 (94%) people agreeing to be screened. The screening tool detected that 460 (49%) of those needed no intervention, 345 (36%) needed brief advice and 83 (9%) required referral to specialist services. This showed the value of the screening but also helped to reassure staff that people were happy to take part.

Introduction

Ireland still continues to rank amongst the highest consumers of alcohol in Europe, with the average Irish adult drinking 11.3 litres of pure alcohol in 2009². As part of the Programme for Government 2007-2012³, the Government agreed to: "Provide early intervention programmes in all social, health and justice services to ensure early detection and appropriate responses to high risk drinking". The purpose of early intervention programmes is to detect high risk and harmful drinking in individuals, before or shortly after the early signs of alcohol related problems. This action led to the decision by the Health Service Executive former Population Health Directorate to designate "Towards a Framework for Implementing Evidence based Alcohol Interventions" as one of its transformation projects.

There is clear and conclusive evidence that the problems from consumption levels are reflected in both admissions to general hospitals⁴⁻⁷ and attendances at emergency departments⁷⁻⁹. Hope et al⁹ proposed that between 20% and 50% of all presentations to emergency departments in Ireland are alcohol related, with the figure rising to over 80% at peak weekend periods. The initial focus of the project was to test feasibility of screening and brief intervention (SBI) within emergency departments. In February, 2008 a mapping exercise was undertaken with all acute hospitals nationally. The results of this exercise showed the level of response to alcohol related attendances and helped to identify acute hospitals where significant interventions were already in place. A national meeting with persons interested in alcohol in the acute hospital setting took place in June, 2008. The mapping document and national meeting identified seven hospitals where the feasibility test could be carried out. Multi-disciplinary meetings were held with staff in seven hospitals and four of the seven hospitals were able to test feasibility of SBI in the emergency department.

Methods

Staff were briefed on the project in four hospitals and agreed that over the period December 2009 to February 2010, they would administer the screening tool and deliver appropriate interventions. The M-SASQ (modified-single alcohol screening question) screening tool was selected for use within the hospital emergency departments. This is a single question screening tool, which uses question 3 from the Alcohol Use Disorders Identification Test (AUDIT). The AUDIT¹⁰ screening tool is considered the gold standard of screening tools internationally. However, it contains ten questions and is considered time consuming to administer. The SIPS¹¹ (Screening and Intervention Programme for Sensible Drinking) programme in the UK developed the M-SASQ screening tool from the original Single Alcohol Screening Question (SASQ)^{12,13}. The tool was modified and adapted to Ireland's standard drinks (1 drink= 10g of ethanol). Testing in the SIPS pilot study¹¹ showed M-SASQ has a higher sensitivity and specificity than the original SASQ (Sensitivity 91.8; Specificity 70.8; AUC 0.929) when compared to the gold standard

AUDIT during a pilot study within this wider SIPS programme. Nurses in hospitals A, B and C administered the M-SASQ screening tool in the emergency department, while Hospital D administered the tool in the Clinical Decisions Unit. Hospitals A, B and C administered the screening sheet through triage and also by requesting patients to self-complete the form for discussion with a doctor or a nurse.

Results

A total of 944 patients across four learning sites were screened for hazardous and harmful alcohol use (Table 1). The results showed that there was good co-operation from the public with 94% of people agreeing to be screened. The screening tool detected that 49% of people needed no intervention, 36% needed brief advice and 9% required referral to specialist services. This shows the value of the screening but also helps to reassure staff that people were happy to take part.

Table 1 Results of screening in the four hospitals

	Hospital A Total Number Screened = 381	Hospital B Total Number Screened = 337	Hospital C Total Number Screened = 170	Hospital D Total Number Screened = 56	Total Number Screened = 944
No further intervention required	46% (n=177)	60% (n=202)	41% (n=70)	19% (n=11)	49% (n=460)
Brief advice offered	41% (n=157)	30% (n=101)	33% (n=56)	56% (n=31)	36% (n=345)
Referral to specialist services recommended	11% (n=41)	3.5% (n=12)	12.5% (n=21)	16% (n=9)	9% (n=83)
Declined to take part	2% (n=6)	6.5% (n=22)	13.5% (n=23)	9% (n=5)	6% (n=56)

Discussion

The response towards the project was positive in all hospitals and there was an acceptance among all staff that alcohol is a problem for emergency departments. Staff felt that alcohol was by far the main drug problem encountered in their work and in some areas staff cited an increase in poly drug use, particularly cocaine and alcohol use. All agreed that there was value in screening and delivering brief interventions particularly as some staff felt that alcohol was becoming an increasing problem in emergency departments. While the aim of the project was to screen everyone attending the emergency department, it was acknowledged at the outset that there are certain circumstances where this is not feasible for staff. Examples given were; patients drunk on arrival in the emergency department, seriously ill patients, refusal to co-operate, confused or agitated patients, nursing home/residential care unit patients and patients detained under the Mental Health Act, 2001¹⁴. At all times screening was left to the discretion of staff in the individual hospitals and patients could also decline to be screened. Staff concerns about patient refusal proved to be unfounded as only 6% declined to be screened. This figure is further supported by a survey¹⁵ which found that there is near complete support (95% or over) for healthcare professionals asking about alcohol consumption where there is a link to the

condition or treatment. While there is less support in the context of routine history taking, support remains strong at 89 %.

As screening for alcohol use was likely to identify some patients requiring referrals to specialist services, local alcohol and addiction services were informed of the project prior to the commencement of the feasibility test. The number of patients requiring referral was lower than anticipated by staff at 9%. A localised media campaign accompanied the rollout of the project in the participating hospitals and included press releases, interviews with local media and posters displayed in waiting rooms. The aim of the media campaign was to inform the general public that this test was taking place in selected hospitals and if they attended the emergency department in their local area they would be asked about their alcohol use.

Staff displayed a positive attitude and willingness to participate in the test and were committed despite the barriers they encountered within their work environment. Emergency departments are by their very nature busy environments and at the time of the SBI rollout there were additional strains placed on resources with the H1N1 virus and severe winter weather resulting in an increase in emergency department attendances. The identification of a local "champion" at each site was vital to the roll out of SBI within the emergency department. In some cases the alcohol/substance misuse liaison nurses and liaison psychiatrists fulfilled this role, providing invaluable information on existing alcohol interventions within the hospital and acting as a liaison between the project team and relevant staff within the hospital. In other cases the "champion" role was fulfilled through a combination of support from the local addiction services, psychiatric liaison service and the health promoting hospital co-ordinator or emergency department nurse manager. This led to a co-ordinated effort within the emergency department. The value of the work provided by alcohol/substance misuse liaison nurses and other services cannot be underestimated.

The feasibility test also highlighted the challenges of implementing SBI in the emergency department. Prior to the feasibility test seven hospitals were identified as appropriate sites. However, only four committed to the test. Of the three hospitals that declined to take part, one hospital cited understaffing as the reason, another was experiencing a period of staff rotation and the final hospital questioned the ethics of the project. Ethical approval had not been sought for the project, as it was not research based. As a result of the ethical issue being raised the authors sent a copy of the project protocol to the Chairperson of the Public Health Medicine/ Occupational Medicine Research Ethics Committee of the Royal College of Physicians of Ireland. The Chairperson replied that in his view the project did not require ethical approval as it was a service and not a research issue. However, as the issue had been raised each of the four participating hospitals' ethics committees was asked to consider the project and ethical approval was granted.

Following the feasibility test, staff expressed considerable concern regarding time constraints for delivering SBI. Staff felt that alcohol is a sensitive issue for a lot of patients and the emergency department environment is not always conducive to delivering a brief intervention. The need for privacy was referred to, along with delivering a worthwhile intervention. There was a perceived benefit from having a dedicated member of staff to provide information and support and who has allocated time to provide an intervention. The existence of an alcohol/substance misuse liaison nurse meant that staff had already been exposed to alcohol awareness training and in some cases brief intervention training. In the absence of an alcohol liaison nurse, other services such as local drug and alcohol services or health promotion hospital coordinators provided training support to hospitals. Where alcohol awareness training had been provided, staff reported that they were more comfortable asking about alcohol use. Training is essential for staff to feel competent and confident in delivering

SBI. A training programme was offered to all participating hospitals and the SAOR¹⁶ model of training for SBI for alcohol in the emergency department & acute care settings was selected. The SAOR acronym (Support, Ask and Assess, Offer assistance and Refer) offers a four step model for the delivery of SBI which guides practitioners in the emergency department and other acute hospital settings through brief intervention in a flexible and adaptable manner. During discussions with staff at hospital visits, several barriers to training were highlighted, in particular the release of staff to attend training and the length of training courses. Flexible options for training delivery are now required; in practice onsite and e-learning programmes are the only practical options for emergency department staff. The SAOR model of training provided an appropriate training tool for introducing SBI to the emergency department and verbal feedback from the hospitals was positive.

The single item M-SASQ screening tool proved popular with staff and as envisaged, staff reported that the screening tool itself was the best option for a busy emergency department. Administering a longer screening tool was not deemed practical in an emergency department but staff felt that this might be possible in other hospital wards or in a self-administered computerised test based in the emergency department. Overall, staff reported that the M-SASQ screening tool was user friendly and quick and easy to administer. They also felt that a single item question could be more easily included in standard patient documentation, both paper and electronic. The inclusion of screening questions in emergency department and patient documentation would help with the recording of data and follow up with the patient. Proposals have been put forward in some of the hospitals to have alcohol documentation included in the standard patient documentation. This exercise has demonstrated that there is much benefit in systematic screening for alcohol in Emergency Departments as our drinking patterns are such that much morbidity can be prevented. Ideally, the screening should become part of the normal clinical assessment.

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Safe and Judicious Paediatric Psychotropic Prescribing

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To receive CPD credits, you must complete the questions online at www.imj.ie.

Abstract

Psychotropic medications are now a well-established and evidenced based treatment for increasing number of child mental health disorders prescribed at increasing frequencies and by increasing number of professional groups. Clinicians' perceived levels of competence and standardised monitoring lag behind prescribing practice and should be addressed by regular continuous professional development. A study specific questionnaire on psychotropic prescribing practice in children was mailed to all child psychiatrists and paediatricians working in Ireland and GPs from a selected Dublin CAMHS catchment area. Of the 116 who replied, (39% response rate), antidepressants (58.7%), antipsychotics (57.1%) and ADHD medications (36.5%) were most commonly prescribed. Results suggest increasing trends of monitoring amongst Irish clinicians over time, but with some lack of specificity. Commensurate with the wish of clinicians, ongoing training in paediatric psychopharmacology is considered essential in order to benefit from the increasing advances in pharmacology.

Introduction

Over the last few decades there has been a significant increase in the evidence base for, and use of, psychotropic medication for children^{1,2}. They are increasingly prescribed by paediatricians and general practitioners in addition to child psychiatrists³⁻⁵. Linked to this has been the rapid development of newer classes of medications promising a much improved risk benefit ratio, and purporting reduced side effects. However with increased pharmacovigilance there has been a parallel increase in the reporting of serious and often unexpected adverse effects. Newer antipsychotic medications have been associated with significant cardiac and metabolic side effects^{6,7}. Newer antidepressants, Selective Serotonin Reuptake Inhibitors (SSRI), whilst safer in overdose carry FDA 'black box' warnings regarding an increased risk of suicidality in children, adolescents and young adults⁸.

Psychostimulants, the mainstay treatment for ADHD, and one of the most common paediatric medication used, cause increases in heart rate and blood pressure, along with possible effects on height and weight trajectories⁹. They have more recently been associated with sudden unexplained death and carry a 'strong' warning from the Irish medicines board in this regard^{10,11}. Clinicians need to exert additional care in the paediatric population. The literature suggest that there is much variation in prescribing practices of clinicians, even within the same disorder, however we do not have similar levels of evidence which inform us regarding the monitoring practice of clinicians¹². There is a small but growing literature on the use of such medication in children in Ireland.

Methods

A study specific questionnaire was mailed to all child psychiatrists and paediatricians working in Ireland and GPs from a selected Dublin CAMHS catchment area. They were asked about prescribing practice of psychotropic medication in children. Attitudes, knowledge base and attitudes of their medical and non-medical colleagues were asked and reported separately.¹⁴

Results

116 out of 300 questionnaires were returned giving a response

rate of 39%. Forty-one identified themselves as child psychiatrists (36.9%), 46 (41.4%) as paediatricians and 24 (24%) as GPs. Respondents reported medications routinely used, listing antidepressants (58.7%), antipsychotics (57.1%) and ADHD medications (36.5%) as most commonly prescribed by the group (Table 1). Child psychiatrists were most likely to prescribe atypical antipsychotics (76.9%), followed by Methylphenidate (69.2%) and Fluoxetine (61.5%). Very few paediatricians reported prescribing psychotropic medication, (15%, N=7) and of those who did, they

Table 1 Medication Commonly Prescribed

	Total Group n=63	Child Psychiatrist n=39	Paediatricians n=7	General Practitioners n=14	No Profession group given n=3
ADHD Meds (Any)	63.5% (40)	71.8% (28)	71.4% (5)	35.7% (5)	66.7% (2)
Methylphenidate	61.9% (39)	69.2% (27)	71.4% (5)	35.7% (5)	66.7% (2)
Atomoxetine	27% (17)	41% (16)	14.3% (1)		
Fluoxetine	44.4% (28)	61.5% (24)		21.4% (3)	33.3% (1)
Flx plus any other SSRI	58.7% (37)	66.7% (26)		64.3% (9)	66.7% (2)
Atypical Antipsychotic	57.1% (36)	76.9% (30)	28.6% (2)	14.3% (2)	66.7% (2)

Table 2 Baseline Investigations

	Weight (N=86)	Height (N=85)	HR (N=83)	BP (N=84)	FBC (N=75)	LFT (N=72)	ECG (N=69)
Child Psychiatrists	n=39 97.4% (38)	n=40 97.5% (39)	n=38 97.4% (37)	n=40 97.5% (39)	n=31 93.5% (29)	n=30 96.7% (29)	n=30 90% (27)
Paediatricians*	n=12 11 (91.6%)	n=12 11 (91.6%)	n=13 12 (92.3%)	n=12 11 (91.6%)	n=11 10 (90.9%)	n=10 9 (90%)	n=11 10 (90.9%)
General Practitioners	n=17 64.7% (11)	n=15 60% (9)	n=15 60% (9)	n=14 57.1% (8)	n=15 60% (9)	n=14 57.1% (8)	n=10 30% (3)

(N=) valid responses, % of valid responses

*18 (60%) Paediatricians indicated they did not prescribe and did not answer this question. Data (%) are on those who did respond.

generally restricted their prescribing to ADHD medication, almost exclusively Methylphenidate. Of the 14 GPs who prescribed, (58% of respondents), both Methylphenidate (35.7%) and antidepressants (64.3%) were 'commonly' used with only one GP prescribing an antipsychotic.

Most child psychiatrists routinely carried out the following investigations, Height (39, 97.5%) Weight (38, 97.4%), Heart Rate (37, 97.4%), and Blood Pressure (39, 97.5%) (Table 2). These measures were also performed by most GPs, but at a lower frequency. Between 28-31 paediatricians responded to the questions on routine baseline investigations. Most of them indicated that they did not prescribe psychotropic medication and they replied that the questions were not applicable to them. Of the smaller number who did prescribe (N=9-12) nearly all (90%-92.3%) carried out these assessments. Despite antipsychotics medication being cited as the medication that the child psychiatrists most often used, investigations such as electrocardiogram (ECG), full blood count (FBC) and liver function tests (LFT) were less commonly done than height and weight measurements (Table 2).

Discussion

In this study, most child psychiatrists routinely carried out Height, Weight, Heart Rate and Blood Pressure (Table 2). It is generally accepted that these measures should be considered standard practice prior to prescribing a stimulants¹². These results are higher than those reported in a UK sample of child psychiatrists (2001) and an Irish sample (2008), suggesting perhaps an increased awareness of the adverse effect on growth trajectories and the need for careful monitoring^{13,14}. A recent study found that long term stimulant use (> 3 years) was indeed associated with a slower rate of physical development during puberty highlighting the need for regular monitoring, drug holidays and prescribing as low a dose as is possible¹⁵. Given the high rate of metabolic and cardiac effects of antipsychotics, it is generally accepted that standard practice should include baseline ECG, fasting blood glucose, cholesterol and lipid profile, LFT and FBC⁷. This study did not enquire about conducting baseline fasting lipids or cholesterol levels, but only 90% of child psychiatry respondents 'usually' carried out an ECG.

Controversy still remains regarding the routine request for ECG and FBC prior to prescribing stimulant medication. FBC was requested frequently by all respondents (86%) and by 10 of the 11 paediatricians who responded, despite the fact that their prescribing was generally limited to ADHD medications. Previous recommendations in the summary product of characteristics for methylphenidate regarding 'periodic complete and differential blood and platelet counts,' have since been removed¹⁶. A limitation of the study methodology was it did not differentiate baseline investigations based on medication type and so it is impossible to answer whether baseline ECGs or FBCs are restricted to antipsychotic use, particularly Clozapine in which regular FBCs are mandatory, or medication such as TCA which carry a higher cardiac risk.

Paediatricians typically prescribed only for ADHD cases, and their low threshold to conduct ECG suggests that the Irish paediatricians may be following the recommendation by the American Heart Association (AHA) which in 2008 initially recommended routine baseline ECG prior to starting stimulant medication¹⁰. The AHA statement is at odds with the carefully considered and evidence-based recommendations of the American Academy of Child Psychiatry and Paediatrics, who argue that sudden unexplained deaths occur in stimulant treated ADHD cases at a frequency no higher than in the general population and that routine ECG screening does little to predict cardiac deaths^{17,18}. In contrast, they recommend baseline ECGs only in those cases in whom there is an increased risk of cardiac events, either based on personal or family history. This is consistent with a recent large survey of 1200 practicing paediatrician members of the American Academy of Paediatrics,

in which 93% completed a comprehensive history and physical examination, but only 15% performed an ECG prior to commencing psychostimulant medication¹⁹. Recent literature reviews highlight variability in the perceived 'minimum accepted baseline investigations'¹² and conclude 'that no consistent guidelines around monitoring practice exist'²⁰.

Thirteen best practice principles for safe and effective prescribing have been recommended²¹. These include taking a full psychiatric and medical history, basic physical examination and onward referral and targeted investigations when indicated. The authors also recommend the clinician develop a clear and multifaceted treatment plan with a focus not just on the initiation of medication, but also maintenance and when appropriate discontinuation. Similar plans regarding monitoring of medication effectiveness and adverse effect should be made explicit to the family including attention given to issues of adherence and informed consent. Adequate dose levels should be used, and polypharmacy kept to a minimum and supported by a clear rationale for use. The increase in prevalence of mental health disorders, particularly ADHD in which the role of medication is well established, occurs alongside continuing lack of adequately resourced services.

The recent 4th CAMHS report suggests that services in Ireland are at 38% of recommended level^{22,23}. Services that are available often do not have the full complement of staff with the necessary skills to offer the full range of treatments, with the risk of increased medication use by necessity. In the UK, between 1997-2002, there has been a significant increase in the range and number of medications prescribed, representing a ten-fold increase in children requiring medical monitoring²⁴. Regardless of whether such practice is acceptable, prescribing medication to young children, with all the biological and ethical concerns, needs to follow evidenced based practice, be judiciously used and follow high quality assessments with clear treatment and monitoring plans.

More recent guidelines, although limited to antipsychotic medication are to be welcomed, as they provide practice recommendations based on both a systematic review of the literature and when absent, expert multidisciplinary group consensus²⁵. With advances in pharmacogenetics, genetic testing and therapeutic drug monitoring may become part of the routine clinical baseline testing and personalized medicine. However, in the current economic climate, routine and elaborate investigations with dubious clinical merit need to be seriously considered and the benefit, risk, and cost-effectiveness carefully studied. Commensurate with the wish of clinicians, continuous professional development in the area of paediatric psychopharmacology should be prioritized, and the issue of appropriate monitoring added to the topic list^{3,13}.

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Care of Type 2 Diabetes in Unresourced General Practice: Current Practice in the Mid-West

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Abstract

It is estimated that 4.5% of the Irish population have type 2 diabetes¹. The HSE intends to move the care of uncomplicated type 2 diabetes to General Practice (GP). The study reviewed current General Practice diabetes care in the Irish Mid-West. The files of randomly selected patients from 12 GP teaching practices attached to the University of Limerick were audited. 842 patients were identified (62% male, 38% female). The mean age was 66 years. 75% were GMS patients. A practice protocol was used in 71% of patients. Average Cholesterol (4.3mmol/l), creatinine (85.3mmol/l), HbA1c (56.7 mmol/mol) and systolic blood pressure (SBP) (134 mmHg) measurements were well documented and controlled. However the rates of and mean intervals for foot review (60.2%), BMI measurement (52.3%), retinopathy screening (62.0%) and influenza vaccination (63.0%) were unacceptably low. Current management of type 2 diabetes in unresourced general practices is suboptimal although some biochemical parameters are well controlled.

Introduction

Type 2 diabetes is one of the commonest chronic conditions worldwide². The World Health Organisation (WHO) estimates that the number of cases globally has increased from 135 million in 1995 to 347 million³. In Ireland, it is estimated that between 157,000 and 250,000 people currently have diabetes of whom

100,000 are undiagnosed^{4,5}. There is increasing evidence that a primary care-led health system can provide improved health outcomes at affordable costs compared to a system centred on secondary and specialist care⁵⁻⁷. Provision of structured diabetes care in general practice, has been shown to provide equivalent standards of care to that achieved by hospitals, with enhanced

diabetes related quality of life⁸⁻¹⁰. In 2011, Ireland's Health Services Executive (HSE) announced that the care of patients with uncomplicated type 2 diabetes would shift from secondary care to General Practice by the end of 2012¹¹. With an implementation plan not yet published, this research aims to determine current care of type 2 diabetes in General Practice and examine how prepared it is to take on the proposed large burden of diabetes management.

Methods

12 GP teaching practices affiliated to the University of Limerick General Practice Training Scheme (UL GP Scheme) and or the University of Limerick Graduate Entry medical School (UL GEMS) in the Mid-West of Ireland took part in this study. A data collection tool was developed (based on the Midlands Structured Diabetes Programme¹²). Data was collected by GP Registrars or medical students who had been trained in the use of the tool. This was completed over a five month period from August to December 2012. All practices were computerised. Patients were identified for inclusion by memory, by searching for those who were coded as having type 2 diabetes and for patients prescribed oral hypoglycaemic agents.

The following patient parameters were collected: patients date of birth, sex, General Medical Services (GMS) eligibility, date of last full diabetic review, current smoking status, body mass index (BMI; weight in kg/height in metres²), systolic blood pressure (SBP), blood levels of glycosylated haemoglobin (HbA1c), creatinine and fasting cholesterol, urinary albumin to creatinine ratio (ACR), documented diabetic foot examination, documented retinopathy screening, annual influenza vaccination and any pneumococcal vaccine. Practices were asked if they used a protocol for diabetes care. The rates of recording of ACR, foot review, retinopathy screening, knowledge of smoking status and pneumococcal vaccination in practices using a protocol were compared with those not using one. For the purposes of this study we defined a protocol as "evidence that the patient was seen in a structured way using any type of protocol". We used Fishers exact test (FET) and chi squared tests (X²) to quantify the differences found.

All statistical analyses were conducted using SPSS V20. Ethical approval was obtained for this study from the Research Ethics Committee of the Mid Western Regional Hospital, Limerick.

Results

Information was collected on 842 patients from 12 different geographical areas in the Mid-West of Ireland. Of the participants in the study, 522 (62%) were males and 320 (38%) were females. The average age was 65 years. 625(74.2%) of the study population had medical cards, whereas 211 (25.1%) were private patients. Information on the presence of GMS status was missing on 6(0.7%) of the 842 patients. A practice protocol for the management of type 2 diabetes was in place for 596 patients (70.8% of the total). Known prevalence of diabetes was measured in 5 practices. This varied from 1.4% to 3.9%, with a mean of 2.48%. The mean interval since the previous full diabetes review in all the practices studied was 308 days (95% C/I was 216 –400).

BMI

Of the 440 patients (52.3%) for whom BMI was documented, the mean BMI was 31.40(95% CI 30.48 to 32.31).

Systolic Blood Pressure

Of the 821 patients (97.5%) for whom Systolic blood pressure was recorded, their mean systolic blood pressure was 134.21mmHg (95% CI 133.04mmHg to 135.38mmHg).

HbA1c

Of the 814 (96.7%) of patients for whom this was recorded, the mean HbA1c was 56.75mmol/L (95% CI 55.67 to 57.84).

Creatinine Value (umol/L)

A measure of renal function, creatinine, was recorded for 823 patients (97.7%). The mean creatinine was 85.35umol/L (95% CI 83.32 to 87.38umol/L).

Table 1 Recorded Clinical Parameters and Investigations

Clinical Parameter	Documented (as a % total population studied)	Mean (Units)	95% Confidence Interval	Mean Interval since last checked (Days)	95% Confidence Interval (Days)
Body Mass Index	440 (52.3%)	31.40 (wt/ht ²)	30.48-32.31	455	415-495
Systolic Blood Pressure	821 (97.5%)	134mmHg	133-135	297	277-317
HbA1c	814 (96.7%)	57mmol/L	55.7-57.8	279	264-295
Creatinine umol/L	823 (97.7%)	85.35umol/L	83.3-87.4	279	264-295
Total Cholesterol	820 (97.4%)	4.29mmol/L	4.22-4.36	279	264-295

Table 2 Other components of annual diabetic review

Clinical Parameter	Documented (as a % total population studied)	Mean Interval since last checked (Days)	95% Confidence Interval (Days)
Albumin: Creatinine Ratio	417 (49.5%)	413	377-449
Foot review	507 (60.2%)	522	480-564
Retinopathy Screening	521 (62.0%)	625	556-693
Influenza Vaccination	643 (76.4%)	499	461-536
Pneumococcal Vaccination	366 (43.5%)	1640	1520-1761

Total Cholesterol (mmol/L)

Total cholesterol was recorded in 820 (97.4%) patients. The mean total cholesterol was 4.29mmol/L (95% CI 4.22 to 4.36mmol/L).

Smoking Status

Smoking status was recorded for 577 patients. 265 (31.5%) patients had an unknown smoking status. Of the 577 patients who had their smoking status documented, 467 (55.5%) were non smokers and 110 (13.1%) were smokers. These results are summarised in Table 1.

Urinary ACR, diabetic foot review, documented retinopathy screening, influenza and pneumococcal vaccination rates are summarised in Table 2. All this data was recorded over the 10 years prior to the study. If we look at the percentages of the data recorded over the 2 years prior to the study, it can be seen that the amount of meaningful clinical review conducted was even lower. These figures are summarised in Table 3. We studied the effect of protocol use on the recording of ACR, foot examination, retinopathy screening smoking status and pneumococcal vaccination. Practices using a protocol recorded these parameters significantly more than those not using a protocol. This is summarised in Table 4.

Table 3 Percentage of total recorded in the past 2 years

Clinical Parameter	% of total recorded in the past 2 years
Weight recorded	66%
Systolic blood pressure	90%
Bloods checked	94%
Albumin:creatinine ratio	43%
Foot exam	48%
Retinopathy screen	49%
Flu Vaccination	63%

Table 4 Percentage of yes values recorded for each of the clinical parameters in column 1

Clinical Parameter	Protocol NOT followed	Protocol followed	p-value
Albumin: Creatinine Ratio	21.6% (n=53)	61.1% (n=364)	p<0.001 (FET)
Foot review	29% (n=71)	73.2% (n=436)	p<0.001 (FET)
Retinopathy Screening	38.8% (n=95)	71.5% (n=426)	p<0.001 (FET)
Smoking Status Unknown	50.6% (n=124)	23.5% (n=140)	p<0.001 (χ ²)
Pneumococcal Vaccination	49.4% (n=121)	41.1% (n=245)	p<0.032 (FET)

FET: Fisher's Exact Test. χ² : Chi Squared Test.

Discussion

When GPs are given adequate resources, as in the Midlands Structured Diabetes Care Programme, their management of type 2 diabetes is of an equivalent standard to that of secondary care and patients also experience a better quality of life¹⁰. These resources include not only financial resources to enable practices to employ additional medical and administrative staff, but also community resources such as clinical nurse specialists in diabetes care with an organisational as well as a clinical role. Timely access to dietitians, community education programmes such as DESMOND (Diabetes Education and Self-Management for Ongoing and Newly Diagnosed) and retinopathy screening needs to be available to all GPs in an equitable way. The known prevalence of type 2 diabetes (2.5%) among the 5 practices in

which it was recorded here is lower than the 5% estimated prevalence in Ireland⁴. The mean BMI of 31.4 kg/m² is substantially more than that recommended by the ICGP guidelines¹² but very similar to the Midlands median BMI figure¹² of 30.7kg/m². The 2013 ICGP guideline for the integrated care of type 2 diabetes recommends that our target HbA1c should be less than or equal to 53mmol/mol for the majority of patients¹². A less stringent target of less than or equal to 58mmol/mol is felt to be appropriate for patients with a history of severe hypoglycaemia, limited life expectancy, advanced diabetic complications and significant co morbidities. The median HbA1c value in the Midlands audit was 6.8% (51 mmol/mol). Therefore our study average of a HbA1c of 57mmol/mol is close to the recommended target. The ICGP guideline recommends a systolic blood pressure of 130mmHg. The average systolic blood pressure (SBP) in our study was 134mmHg and compared well to the median SBP readings of 134 mmHg, in the Midlands audit¹².

Cholesterol levels were checked at appropriate intervals and were well controlled. This compares well with the Midlands results and ICGP guidelines. The average creatinine level was well within normal range at 85.3umol/l. However urinary ACR was only measured in 49.5% of cases with a mean interval since last checked of over 13 months. This result shows an unacceptable level of screening for chronic kidney disease¹. A foot examination is recommended at each visit according to the ICGP guideline. In this study only 60.2% of patients had a documented foot examination carried out and the mean interval from last foot examination was unacceptably long at 522 days. In the Midlands study all patients had had a foot review in the previous 12 months. Retinopathy screening should be conducted annually. Our result of 62% was substantially below this target. Also the average time since it was checked of over 20 months was unacceptable. Our influenza vaccination rate of 63% in the previous 2 years (76.4% overall) is substantially below the ICGP guideline advice to offer the vaccine to all patients annually. A pneumococcal vaccine uptake rate of 43.5% in the previous 5 years again falls substantially short of the 100% target recommended by the ICGP guideline.

In a related qualitative study, we have shown that lack of financial incentive, lack of access to secondary resources, lack of staff and increased workload were the main barriers to GPs taking full responsibility of their patients with type 2 diabetes. Our study indicates that when unresourced GPs and their practice staff review patients with diabetes in the normal clinical setting, many of the national targets are reached. This is especially true of certain key parameters such as measurement of blood pressure, creatinine, total cholesterol and HbA1c levels. However other important measures such as calculation of BMI, administering annual influenza vaccine and once off pneumococcal vaccine, checking for microalbuminuria and diabetic foot disease and ensuring retinopathy screening are occurring at substantially below current best practice guidelines. The fact that there is a statistically significant difference in the frequency of some measures between those practices using a protocol and those who don't, again shows the benefits of providing some form of structured care within general practice.

One of the studies strengths was that study assistants went to the practices and took the data directly from the patient's healthcare records (HCR) using a standard audit tool. The data collectors were assigned to the practices as either medical students or GP registrars and thus were very familiar with the GP software systems. Hence we can vouchsafe the accuracy of the data collected. This data was then anonymised and was analysed using standard statistical tests. One weakness of the study was that we only looked for data in the patient general practice HCR. We did not look outside of this for data for example in hospital record. It is also possible that patients may have been receiving healthcare from other GPs although in the vast majority of cases this was felt to be unlikely. It is also possible that poorly measured

clinical parameters such as foot care and retinopathy screening were conducted without being documented for example in secondary care. However in line with accepted practice¹² we only accepted documentation in the HCR as proof that it was actually done. Also, the study practices were all involved in either general practice or medical student training and therefore may not reflect the totality of diabetes care in general practice.

In conclusion, much GP management of type 2 diabetes in the community is unstructured. Known prevalence of diabetes is low. Certain important clinical parameters were measured in the last 2 years and were well controlled. Some important parameters were not measured. Management of type 2 diabetes in unresourced general practices is suboptimal. This needs to be addressed before handover of routine care of diabetes to general practice.

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Emergence of Opiate-induced Neonatal Abstinence Syndrome

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Abstract

Neonatal abstinence syndrome (NAS) is the clinical picture of infants withdrawing from in-utero substance exposure. The incidence of NAS rose in Dublin maternity hospitals in the 1970's and '80's in parallel with increasing in opiate abuse in that city. The purpose of this study was to determine if a similar pattern was emerging in Cork University Maternity Hospital. Data from the Erinville Hospital (2000-2007) and CUMH (2008-2011) were compared. Sixteen cases of NAS were identified, two at Erinville Hospital (22,987 deliveries; incidence = 0.09/1000 deliveries) and 14 at CUMH (37,414 deliveries; incidence = 0.38/1000 deliveries; $p < 0.01$). Five of the 16 mothers were using heroin, while ten were on methadone maintenance. All were multi-drug abusers. Newborns requiring pharmacotherapy for NAS (5/16) had prolonged hospitalisations compared to those requiring supportive care. NAS in Cork is increasing. Primary, secondary and tertiary preventative measures are warranted to prevent further escalation.

Introduction

A Department of Health report¹ highlighted an escalation in problem-drug use nationwide (2001-2006). Opiate misuse comprised almost 80% of problem-drug use in Dublin and surrounding areas, but only 8% in the Cork and Kerry area. Media reports have reported increasing maternal opiate misuse during pregnancy². A rise in opiate misuse in Dublin in the late 1970s and early 1980s³ was linked to increasing incidences of neonatal abstinence syndrome (NAS), a condition observed when infants withdraw from in-utero substance exposure⁴. The purpose of this report was to document the incidence of opiate-induced NAS in Cork and determine if a similar pattern was emerging.

Methods

A retrospective chart review was conducted to investigate the incidence of NAS at the Erinville Hospital, Cork (2000-2007) and Cork University Maternity Hospital (CUMH) (2008-2011). Indexed cases of NAS were identified by Hospital In-Patient Enquiry (HIPE), and from labour ward and neonatal unit logbooks. Routine inquiry of maternal misuse of non-prescription drugs occurred at the antenatal booking visit. Women, suspected or self-declared, were referred to social services. Antenatal and neonatal urine toxicology screening⁵ were not routinely performed in these hospitals. NAS was identified and treated based on the Finnegan score of neurological, autonomic and gastro-intestinal parameters⁶.

Results

Sixteen cases of NAS were identified, two at Erinville Hospital (22,987 deliveries; incidence = 0.09/1000 deliveries) and 14 at CUMH (37,414 deliveries; incidence = 0.38/1000 deliveries). Mothers ranged in age from 22 to 34 years old (median = 27). Opiates used included heroin ($n = 5$), tramadol ($n = 3$) and methadone ($n = 10$). All mothers were self-declared multidrug abusers of prescription and non-prescription drugs, including benzodiazepines, antidepressants, codeine and cocaine. The mean birth weight of the babies was 2802 ± 576 g and the average gestational age at delivery was 275 ± 7 days. All infants received supportive care (i.e. swaddling, low light environment, reduced noise). Five of the 16 infants required pharmacotherapy based on the Finnegan score (Oramorph $n = 3$, Morphine $n = 1$, Phenobarbitone $n = 1$). The length of hospitalisation for these infants was prolonged [Oramorph (23, 42, 72 days), Morphine (37 days), Phenobarbitone (15 days)], compared to those infants requiring supportive care only (mean = 11.2 ± 5.4 days).

Discussion

Until 2007, NAS was uncommon in Cork, with only two cases identified in seven years at the Erinville Hospital. Since then, following amalgamation of the three maternity hospitals at CUMH, 2-3 cases per year were identified, with seven cases occurring in 2011 alone. Despite the small numbers of affected babies, our

experience echoes other studies showing prolonged hospitalisation for neonates requiring pharmacotherapy for withdrawal symptoms⁷. Only symptomatic neonates were identified in the current study. Since only half of drug-exposed infants demonstrate NAS⁸, it's possible that some drug-exposed infants may have been discharged without or prior to developing recognizable withdrawal symptoms. Other infants may have been admitted to other paediatric units with later-onset withdrawal. For this reason, it is not possible to estimate the prevalence of opiate misuse during pregnancy from the incidence of NAS.

Despite reported increases of opiate misuse in Cork, neonatal admissions for NAS remains low compared to Dublin hospitals⁷. Substance use is a chronic illness and the focus of healthcare providers should be on the woman and infant's health. Primary preventative strategies should target women of child-bearing age, including accessibility to appropriate contraception, if indicated. Secondary prevention requires early identification and management of pregnant drug using women. Tertiary prevention aims to minimize the short and long-term consequences on the drug exposed baby. "These infants are vulnerable, not damaged and... can recover and develop normally given an appropriate environment"⁹.

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Impact of New UK Paracetamol Overdose Guidelines on Patients Presenting to the Emergency Department

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Abstract

Paracetamol is involved in a large proportion of overdoses that present to the Emergency Department (ED), either as lone or mixed overdoses. Non-treatment of toxic levels can lead to fulminant liver failure. This study is to determine the impact the new UK treatment guidelines¹ will have on patients presenting with paracetamol overdose. A retrospective review was performed on all patients who had paracetamol levels done in the ED between September 2011 and August 2012. A total of 523 patients were identified, 95(18%) of whom had detectable paracetamol levels. 74 patients from the 95 were evaluated. 18(24%) patients were treated with N-acetylcysteine as per the then paracetamol overdose guidelines. Using the new guidelines would have resulted in 3 more patients being admitted. Our study shows that most patients who present following paracetamol overdose do not require treatment with N-acetylcysteine and suggests that the introduction of the new UK treatment guidelines is likely to result in only a small increase in the number of patients requiring treatment.

Introduction

As of September 2012 there is new guidance for the management of paracetamol poisoning in the UK¹ following recommendations made by the Commission for Human Medicines². Ireland has since adopted the same guidelines from January 2013. Paracetamol is metabolised in the liver to a toxic metabolite p-benzoquinone imine. This is then conjugated with glutathione and inactivated. In paracetamol overdose there is rapid depletion of glutathione stores and hence accumulation of the toxic metabolite. Symptoms of paracetamol poisoning are highly dependent on time of presentation following the overdose. Vomiting due to the drug occurs in less than 12 hours, followed by vomiting due to liver damage in 12-36 hours. From 24-72 hours patients can develop right upper quadrant pain and hypoglycaemia. After 72 hours patients typically present with cerebral oedema and/or encephalopathy. Risk factors leading to accelerated glutathione depletion include malnutrition, chronic alcohol abuse and enzyme-inducing drugs. Intravenous N-acetylcysteine is the treatment of paracetamol overdose and is virtually 100% effective in preventing liver damage when given within 8 hours of the overdose. After this time efficacy falls substantially.

In the new guidelines all patients are now treated based on a single treatment line (previously the high risk line) on the treatment normogram, Figure 1. The loading dose of N-acetylcysteine is now given over 60 minutes to minimise the risk of common dose-related adverse reactions. The toxic dose of paracetamol has been reduced to 75mg/kg from 150mg/kg. The

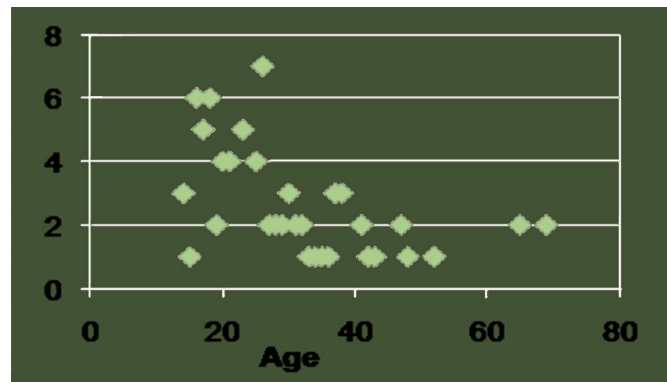


Figure 2 Showing age distribution of patients presenting with detectable paracetamol levels following an overdose

aim of this study was to determine to what extent the introduction of the new UK guidelines¹ will result in a greater number of patients needing treatment with N-acetylcysteine.

Methods

We performed a retrospective review on all patients who had paracetamol levels done in the ED between September 2011 and August 2012 in University Hospital Galway. Data was collected from the biochemistry laboratory computer system and ED notes reviewed through the ED information system. Demographics collected were age of patient at time of overdose, gender, time of overdose and time of blood sample collection, and whether N-acetylcysteine was used. Risk assessment documentation was also reviewed. All positive paracetamol results were plotted on the new UK guideline normogram.

Results

A total of 523 patients were identified as having had paracetamol levels done in 12-month study period. Of these 95 (18%) had detectable paracetamol levels. Fourteen ED notes were not available for review and therefore were eliminated from the study. Thirteen (13%) charts had no documented time of ingestion or time paracetamol level was taken. Of the 13 with no documentation, only 6 (6%) had presented following an overdose. The remainder (7) had a toxicology screen as part of their work up. A total of 74 patients were therefore evaluated. Most of these patients presented between 8pm and 8am (63%), with a male to female ratio of 1:1.7. The average age was 29 years with a range of 14 – 69 years (figure 2). Eighteen (24%) patients were treated with N-acetylcysteine in accordance with the then current guidelines. Assessing these patients against the new UK guidelines would have resulted in treatment and therefore admission of 21 (28%) patients over the 12-month period. Risk assessment was only documented in 27 (36%) patients.

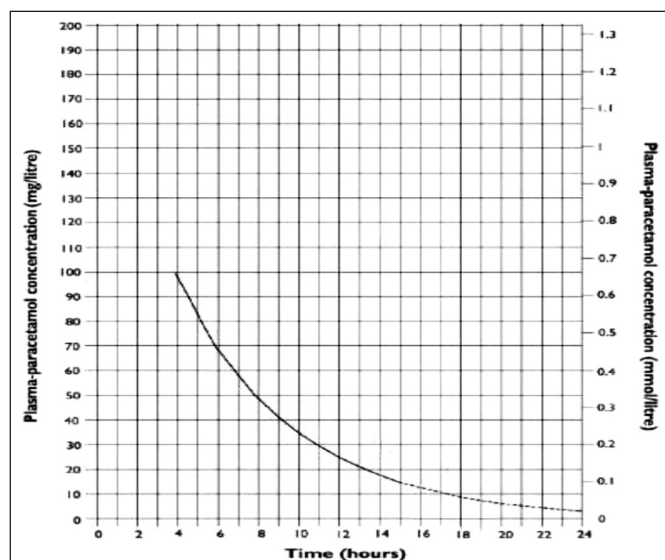


Figure 1 New paracetamol overdose reference normogram

Discussion

This study confirms that most patients who present to ED following paracetamol overdose do not require treatment with N-acetylcysteine. It also suggests that the introduction of the new UK guidelines¹, which will lower the treatment threshold for all patients to the previous high risk line is likely to result in only a small increase in the number of patients requiring treatment. The need for risk assessment, which was poorly recorded in this study will also be eliminated. The new guidelines will simplify the assessment and management of paracetamol overdose without causing a large increase in the number of patients requiring admission for treatment.

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Two Cases of Methaemoglobinaemia Secondary to Amyl Nitrate Use

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Abstract

We wish to report two cases of methaemoglobinaemia secondary to amyl nitrate use. A 55-year-old male presented with saturations in the mid 80s despite FiO₂ of 1.0 and GCS 10 and a 22-year-old female who presented with fluctuating GCS and a slate grey colour. Both were found to have high levels of methaemoglobinaemia on ABG, were treated with methylene blue and made excellent recoveries. These cases illustrate the risk of methaemoglobinaemia secondary to amyl nitrate. Appropriate and prompt management can lead to very good outcomes.

Introduction

We wish to report two recent cases of life threatening methaemoglobinaemia secondary to amyl nitrate use.

Case Reports

A 55-year-old male was brought to the Emergency Department (ED) with an unknown cause of collapse. Though haemodynamically stable he was markedly cyanosed. Oxygen saturations were in the mid 80s, despite FiO₂ of 1.0. GCS was 10. Immediate resuscitation included intubation and ventilation with 100% oxygen. Blood was noted to be chocolate brown in colour. Arterial blood gas (ABG) analysis revealed a very elevated Met-Hb level of 76% (normal range 0-3%), as well as a raised anion gap metabolic acidosis, with a pH of 7.2. Gas exchange was notable for pO₂ 37kPa, pCO₂ 6kPa on FiO₂ 1.0. He was treated with methylene blue intravenously, responded rapidly with resolution of cyanosis and blood gas abnormalities. Collateral history revealed abuse of amyl nitrate "poppers" as well as alcohol abuse. Blood alcohol level was found to be 440mg/dl.

A 22-year-old female was brought into ED with fluctuating GCS and slate grey cyanosis. She had a known background history of heroin and methadone use. An empty bottle of amyl nitrate was found beside her. She was maintaining her own airway but intermittently apnoeic. She smelt strongly of alcohol. Oxygen saturations were 87%. Met-Hb was 67% on ABG analysis. The urinary toxin screen was positive for Benzodiazepine and tetrahydrocannabinol. Initially the patient was haemodynamically unstable with a heart rate of 125 and a blood pressure of 80/60mmHg. Prompt treatment with methylene blue, naloxone infusion, vasopressors and high flow O₂ via facemask led to a quick recovery with an overnight stay in ED. The patient self discharged the next day.

Discussion

Methaemoglobinaemia occurs when red blood cells contain greater than 1% methaemoglobin. Methaemoglobin has an oxidized ferric iron (Fe 3+) rather than the reduced ferrous form (Fe 2+) found in haemoglobin. This structural change is responsible for methaemoglobin's inability to bind oxygen. In

addition, ferric iron has slightly greater affinity for oxygen due to its chemical structure, thus shifting the oxygen dissociation curve to the left, resulting in decreased release of oxygen in tissues. Cyanosis despite oxygen treatment results from both of these effects¹. Methaemoglobinaemia may be congenital or acquired. Acquired causes of relevance to critical care physicians include drug abuse with nitrates including the street drug "poppers" and local anaesthetic toxicity^{1,2}. Occurrences of reported methaemoglobinaemia due to local anaesthetic involved use of either benzocaine or prilocaine in more than 90% of cases. Such events are unpredictable, particularly those related to benzocaine³. Some patients may develop methaemoglobinaemia after a single short spray of benzocaine.

Congenital methaemoglobinaemia generally results from exposure to a drug that provides a sufficient oxidative stress to overwhelm the endogenous reductive pathways. The most common cause of congenital methaemoglobinaemia is cytochrome b5 reductase deficiency (type 1b5R). The major enzymatic system involved reducing methaemoglobin to haemoglobin is adenine dinucleotide (NADH)-dependent methaemoglobin reduction⁴. Cytochrome b5 reductase plays a major role in this process by transferring electrons from NADH to methaemoglobin, which results in the reduction of methaemoglobin to haemoglobin. This enzyme system is responsible for the removal of 95-99% of the methaemoglobin that is produced under normal circumstances.

Complications of methaemoglobinaemia include hypoxic encephalopathy, myocardial infarction, and death. As methaemoglobin levels increase, patients demonstrate evidence of cellular hypoxia. At high levels of methaemoglobin, the pulse oximeter reads a saturation of 85%, which corresponds to equal absorbance of both wavelengths. Pulse oximetry measures the relative absorbance of 2 wavelengths of light to differentiate oxyhaemoglobin from deoxyhaemoglobin. Methaemoglobin absorbs both of wavelengths equally. Death may occur when methaemoglobin fractions approach 70%. Treatment with methylene blue induces the endogenous reductive system, restores the normal redox status of heme-bound iron, and allows conversion of methaemoglobin to haemoglobin.

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We believe these cases demonstrate the need for continuing vigilance regarding methaemoglobinaemia and cellular poisoning secondary to amyl nitrate abuse, which continues to be a problem presenting to the Emergency Department. A high index of suspicion can confirm this diagnosis rapidly, and it responds immediately to treatment.

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Autotransplantation of a Single Functioning Kidney Following Rupture of Renal Artery Aneurysm

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Abstract

Renal artery aneurysms (RAA) are the second most common visceral artery aneurysm. In cases of rupture they pose a significant and emergent surgical challenge. Extracorporeal arterial reconstruction and autotransplantation is often necessary in certain complex cases that are not amenable to aneurysm repair in vivo. We report a case of a 35 year old female with a RAA in a solitary functioning kidney, requiring ex vivo reconstruction and autotransplantation to the iliac vessels.

A 35 year old female with a body mass index (BMI) of 41, presented with sudden onset left flank pain radiating to her back associated with visible haematuria and an episode of transient syncope. She had a background history of a poorly functioning right kidney and hyperthyroidism. On initial examination she was clinically stable with a blood pressure (BP) of 113/70 mmHg and heart rate (HR) of 65 beats per minute (bpm). Routine haematological and biochemical investigations revealed a haemoglobin (Hb) of 13.2g/dl and serum creatinine (sCr) of 152 $\mu\text{mol/l}$. A non-contrast CT scan was performed. This revealed a large left sided retroperitoneal haematoma with extensive haemorrhage within the para-renal space. There was no evidence of renal tract calculi. Two hours later, the patient complained of worsening flank pain and became haemodynamically unstable (BP 70/50 mmHg, HR of 129 bpm).

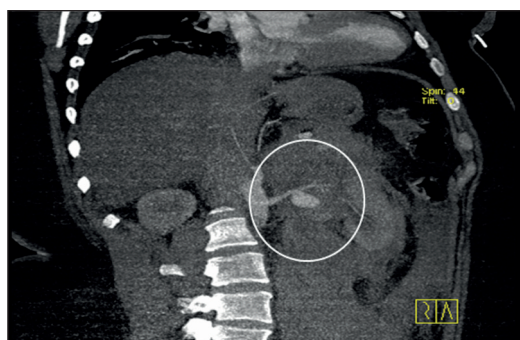


Figure 1
Contrast enhanced CT scan (coronal image) showing left sided RAA (circled).

A repeat Hb fell to 11.3g/dl, sCr rose to 202 $\mu\text{mol/l}$ and she became oliguric. She was resuscitated with intravenous (IV) fluids and once stable underwent a triphasic contrast CT which revealed a large left sided RAA measuring 1.4 x 2.1cm, with extensive active haemorrhage (Figure 1). The aneurysm arose 2.1cm distal to the origin of the left renal artery, with the artery trifurcating immediately distal to the aneurysmal sac. At this point various interventions were considered including radiological embolisation and endovascular repair but were not seen as viable due to the patient's BMI and location and complexity of the aneurysm. The decision was made to proceed with surgery in an attempt to salvage the patient and if possible the solitary functioning left kidney. The patient was placed supine and a chevron incision was made. The ligament of treitz was exposed through the posterior

peritoneum and left renal pedicle identified, mobilised and controlled.

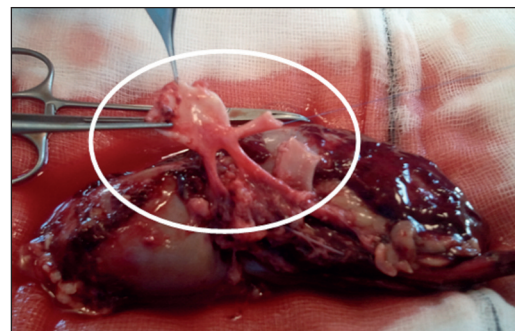


Figure 2
RAA repair ex vivo, backtable image showing aneurysm and trifurcation of vessels distal to aneurysmal sac (circled).

The retroperitoneum was opened, the large haematoma evacuated and left renal artery controlled proximally. The left kidney was then mobilised, vessels cross-clamped, ligated and a left nephrectomy completed. The kidney was then perfused with cold saline and the RAA repaired ex vivo with 6/0 prolene sutures (Figure 2). Through a separate Reisberg incision in the right iliac fossa (RIF), the kidney was autotransplanted to the iliac vessels (6/0 prolene). The warm ischaemia time was 40 minutes. The patient made an uneventful post operative recovery and was discharged on day 10 with a sCr of 177 $\mu\text{mol/l}$. Follow up renal imaging at 10 months showed the transplanted kidney was uniformly well perfused and sCr had returned to baseline (131 $\mu\text{mol/l}$).

Discussion

Renal artery aneurysms (RAA) may be divided into micro, fusiform, dissecting and saccular forms, as in this case¹. Most are less than 1 cm and the literature states they should be treated conservatively unless complicated by hypertension or pregnancy². In the remainder of individuals it is suggested that aneurysms greater than 2 cm require intervention¹. More recently, a greater number of these RAA have been repaired by endovascular stenting and embolisation techniques^{1,3}. However, there is no long term follow up data with regards to these approaches and furthermore they are not considered suitable for more complex aneurysms, especially in or close to distal branch arteries. In this particular case, the distal location of the aneurysm along with the trifurcation of the vessel near the entrance to the renal

parenchyma made it unsuitable for stenting or embolisation. Therefore open surgery and extra corporeal reconstruction was chosen. Although not performed emergently, laparoscopic nephrectomy with ex vivo repair is becoming a more accepted alternative in the elective setting⁴. Ex vivo repair has been recently advocated by various authors^{5,6}. English et al reported 72 repairs for RAA in which 50% were performed ex vivo, with low morbidity and mortality, no unplanned nephrectomy, and excellent patency⁶. Minimally invasive options for RAA repair are available and likely to continue to increase in use as technology and experience improve⁷.

Currently primary excision and reconstruction remains the mainstay of surgical treatment for complex RAA⁷. Ex vivo repair provides a bloodless surgical field and optimal visualisation. In cases which a solitary functioning kidney is affected by an aneurysm of its main supplying artery we recommend extracorporeal repair as the most suitable approach to attempt to salvage the organ. This case report highlights the importance of early clinical awareness of the possibility of a RAA in patients presenting with spontaneous retroperitoneal haematoma.

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Superior Vena Cava Obstruction (SCVO)

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Case Report

A 68 year-old man was referred to the Emergency Department by his General Practitioner with a two week history of dyspnoea preceded by a two month history of weight loss. He also described recent onset of facial and neck swelling. He had a 40 pack-year smoking history, peripheral vascular disease and angina pectoris. Surgical history included a subtotal gastrectomy performed fifteen years previously for benign disease. Clinical examination revealed a raised, non-pulsatile raised jugular venous pressure (JVP) with dilated veins across his anterior chest wall. On auscultation he had only a mild expiratory wheeze. Examination of his hands revealed no clubbing. Initial investigations revealed a normal full blood count, urea and electrolytes, calcium and liver function tests. Arterial blood gas on room air indicated a pH of 7.41, a pCO₂ of 6 kPa, and a pO₂ of 9.1 kPa. He had an abnormal chest radiograph and proceeded to CT thorax, shown in figures 1 and 2 respectively. CT demonstrated a mediastinal nodal mass circumferentially surrounding and markedly compressing the superior vena cava, causing superior vena cava obstruction. The patient underwent bronchoscopy and biopsy which confirmed a diagnosis of small cell lung cancer. Further staging defined this as limited stage disease. He was treated with chemotherapy to good effect which reduced the mass effect from the mediastinal nodal tissue on the superior vena cava.

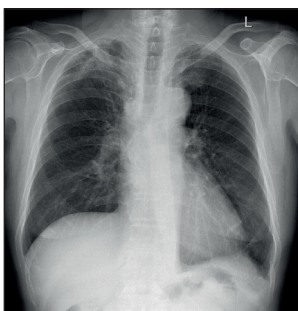


Figure 1
Chest radiograph reveals right hilar lymphadenopathy and enlargement of the right paratracheal stripe consistent with mediastinal adenopathy. The right hemidiaphragm is also elevated, raising the possibility of phrenic nerve involvement with tumour. Radiographs may be normal in superior vena cava obstruction.

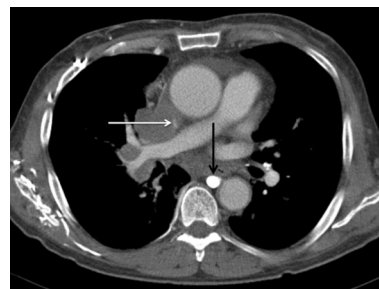


Figure 2
Axial post contrast CT image shows prominent mediastinal and right hilar adenopathy is causing compression of the superior vena cava (white arrow) to a pinpoint. There is contrast opacifying prominent collateral vessels surrounding the right scapula and posterior chest wall that have opened up as a result of the SVC obstruction. There is also prominence of the azygous vein (black arrow).

Discussion

In superior vena cava obstruction (SVCO), blood must return to the right atrium via collateral circulation. The ability of the collateral circulation to accommodate this increased blood flow is dependant on the duration and degree of SVCO¹. There is typically increased venous pressure in the upper body with facial oedema and plethora, dilated veins over the neck and trunk and occasionally in the upper limbs. Patients may describe headache, dyspnoea, dysphagia or hoarseness. In severe cases, albeit rarely, coma may ensue. Causes of SVCO can be intramural, intraluminal and extrinsic. The most common cause is intrathoracic malignancy. This is most often due to non-small cell lung cancer, but SVC obstruction is also often seen with small cell lung cancer, lymphoma, metastatic disease and with primary mediastinal masses². Benign causes include venous thrombosis, TB infection, sarcoidosis and silicosis. It was historically associated with syphilitic aortic aneurysms³. Iatrogenic causes include prior radiation to the mediastinum, indwelling catheters and pacemaker leads, particularly if there have been multiple insertions.

Management of the patient with SVCO depends on the severity of symptoms and the underlying cause⁴. For small cell lung cancer and lymphoma the response to chemotherapy is typically dramatic. Radiotherapy may also be employed with good effect. In other cases, interventional radiology guided SVC stenting or venoplasty

may need to be considered^{5,6} and thrombolysis in the case of SVC thrombosis. These options may also require consideration in severe cases pending a tissue diagnosis. Surgical options include venous bypass grafting. Symptom resolution following successful treatment is typically rapid. Survival depends on the course of the underlying disease and correlates with tumour histology in those cases with a malignant aetiology.

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Laparoscopic Hemicolectomy for Cutaneous Malignant Melanoma Metastasis to the Ileocaecal Valve

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Abstract

Colonic tumours are most frequently primary and lesions secondary to metastasis are uncommon. Malignant melanoma is an aggressive cancer, with a tendency to metastasize and recur. This report describes the case of a 66-year-old man who underwent wide local excision and adjuvant therapy for malignant melanoma three years prior to presentation with loose stools, abdominal cramps and iron deficiency anaemia. CT colonography showed a 6cm ileocaecal mass, and following a laparoscopic right hemicolectomy, histological examination revealed a metastatic melanoma to the ileocaecal valve. Subsequent positron emission tomography showed no residual metastatic disease. Malignant melanoma metastasis to the colon is a rare clinical entity. Metastectomy via laparoscopic right hemicolectomy is an appropriate and effective treatment.

Introduction

Colonic tumours are most frequently primary, with lesions secondary to metastasis uncommon. Malignant melanoma is an aggressive cancer, with a tendency to metastasize and recur.

Case Report

We present the case of a 66-year-old male who was referred with a 4 week history of loose stools, occasional abdominal cramps and iron deficiency anaemia. His background history was significant for undergoing a shave biopsy of a 7mm lesion on his left eyebrow three years previously. Histological examination revealed an invasive malignant melanoma (Clark's level IV, Breslow 1.5mm, ulcerated) and he underwent a wide local excision at that time. Subsequent histology demonstrated a complete excision with clear margins. He received one year of adjuvant Interferon therapy and surveillance computed tomography (CT) of the thorax, abdomen and pelvis demonstrated no recurrent disease.

On initial colonoscopy, the large bowel was visualized to the ascending colon. However the caecum was not identified due to a long, tortuous colon and patient discomfort. Subsequent CT colonography showed an irregular, 6 cm intraluminal mass at the ileocaecal valve. The patient went on to have a laparoscopic right hemi-colectomy for presumed colonic adenocarcinoma. Gross examination of the excised specimen demonstrated an 8cm polypoid, ulcerated, non-pigmented lesion on the ileocaecal valve. Microscopic analysis showed malignant cells with vesicular nuclei, prominent nucleoli and pigment deposition. Immunohistochemistry showed the cells to be positive for S100, Melan A and HMB45, and negative for AE1/AE3, CAM5.2 and CD45. This profile indicated the melanocytic nature of the cells, confirming a diagnosis of metastatic malignant melanoma. There was no

lymphovascular space or perineural invasion, and the resection margins were clear. Twenty nine lymph nodes were identified, all were negative for metastasis. The patient's post-operative course was uneventful and he was discharged on day 5. At latest follow-up he is doing well, with no complications. Subsequent positron emission tomography demonstrated no evidence of persistent neoplastic disease. Following multidisciplinary team review and discussion of risks and benefits, he did not proceed with adjuvant chemotherapy.

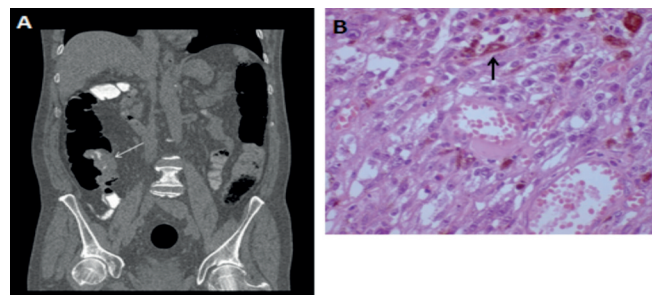


Figure 1 (A) CT colon image representing an irregular 6cm ileocaecal mass (arrow) and (B) High power view (40x) showing tumour cells (arrow) with vesicular nuclei, prominent nucleoli, nuclear pleomorphism and pigment deposition arranged in cords surrounded by fibrous stroma.

Discussion

In Western Europe, the estimated mortality rate from melanoma is 1.8 in 100,000¹. Metastatic melanoma has a poor prognosis, with the median survival for patients with stage IV melanoma ranging from 8 to 18 months after diagnosis, depending on substage². However, over half of stage IV patients are candidates for

metastasectomy and exhibit improved survival over non-surgical therapy, regardless of the site and number of metastases³. Autopsy studies suggest that the gastrointestinal (GI) system is second only to the lung in frequency of metastatic disease⁴. However, clinical symptoms associated with GI tract involvement in melanoma are rare and represent advanced, disseminated disease⁵. In a series of 124 patients with melanoma metastasis to the GI tract, the median survival in those undergoing curative resection is 48.9 months, indicating that surgery should be strongly considered for this subgroup of patients⁶. There are few published case reports of melanoma metastasis to colonic mucosa, usually arising in an existing polyp or colonic adenocarcinoma⁷. To our knowledge there are no previous reports of metastasis to the ileocaecal valve.

This report describes a rare case of melanoma metastasis to the ileocaecal valve and highlights the necessity to consider gastrointestinal metastasis in those with a history of melanoma. Surgical resection of metastasis can be the best management strategy to improve survival.

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Anorexia Nervosa (AN) in Inpatients at a Children's Hospital (2005-2011)

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Abstract

AN is a serious mental illness best treated in the community¹. Those with critically low weight require hospitalisation. There is little published research on AN in Ireland. The aim of this audit was to evaluate the Irish experience. The mean age on admission was 13.5 yrs which is 6mo earlier than 2002 figures. Boys represented 6/20 (30%) of admissions. On admission girls were more underweight than boys (0.4th centile V 9th centile for BMI). This was despite girls presenting to hospital sooner than boys post onset of symptoms. Aside from low weight, over-exercising and food restricting were the most common presenting features. Inpatient weight restoration is successful with a mean weekly weight gain of 930g which is within the recommended range of 500-1000g/wk. Mean hospital stay was 38 days.

Introduction

The 2002 Census estimated there were 2,400 adolescent females with AN with an average age of onset of 14 years². In England during the last decade, there has been an 80% increase in hospitalisation of girls less than 16yrs for the treatment of AN³. CUH has seen a 130% increase in the number of admissions over the same period. Traditionally it was estimated that 10% of sufferers were men though new estimates are adjusting this to 25%⁴. The Maudsley treatment approach, used in CUH, acknowledges the importance of the parents and child in recovery⁵. Patients are initiated on a non-negotiable meal plan with total bed rest and supervision usually implemented. MDT community based therapy is recommended in treating the complex needs of the patient and family⁶. The need for acute hospital admission is usually indicated in poor physical health or poor response/lack of access to outpatient treatment. The Royal college of Psychiatrists state that those where BMI falls <2nd centile probably warrant hospitalisation. Rate of weight loss and BMI centiles position are associated with cardiovascular and electrolyte instability⁷. Calorie content of the meal plan is increased gradually to minimise risk of refeeding syndrome. The longer a patient remains in suboptimal nutrition the more severe

the disorder can become so it is important to correct undernutrition promptly⁸. Body-weight gain during the initial refeeding phase can be slowed by an increase in resting energy expenditure⁹. The weight gain aim is 500-1000g/week¹. A recent study found better outcome among patients who had gained greater than 800g per week¹⁰.

Methods

This audit reviewed the demographics of all inpatients admitted with AN over a seven year period between 2005 and 2011 (n 20). Data from medical and dietetic files were analysed. Descriptive statistics were used due to small numbers.

Results

See Table 1 for admission profile. 20/20 (100%) of patients presented through A&E. The majority (60%) were self referral

Table 1 Admission Profile

	Mean	Female	Male
		14/20 (70%)	6/20 (30%)
Age on admission (yr)	13.5	13.48	13.52
Time of onset prior to admission (mo)	6	4.5	8
Admission BMI		0.4th	9th

with the remaining referred via G.P. None had been previously linked in with CAMHS.

Symptom profile

On admission, it was noted that 5/20 (25%) of patients were known to have been vomiting and 13/20 (65%) were over-exercising. All patients were food restricting. All the girls who had reached menarche had amenorrhoea.

Anthropometry

Mean BMI on admission was 14.8kg/m² rising to 16.7kg/m² on discharge. Girls presented on a lower BMI centile (0.4th) than boys (9th) despite their earlier presentation post onset of symptoms. Although presenting at a lower weight girls made greater gains over stay (5.4kg over total stay versus 3.6kg for boys). On discharge, BMI centile rose in girls to 9th and in boys to >25th. The mean weekly weight gain of 930g is at the upper end of recommended and above the 800g associated with better outcome. Recommended weight gains were achieved in all but weeks 9, 10 & 11. 12/20 (60%) needed oral nutritional supplementation. 3/20 (15%) needed some NG feeding due to insufficient oral intake.

Other issues

9/20 (45%) suffered with constipation during stay. 7/20 (35%) children had undergone recent orthodontic work. 10/20 (50%) were commenced on anti-depressants.

Hospital Stay and discharge

The mean hospital stay was 38 days (range of 7-76 days). The average length of stay for those on psychotropic medication was longer (52 days) than for those not requiring medication (24 days). Most patients were discharged to CAMHS with 3 patients requiring residential treatment. Four patients required re-admission.

Discussion

Admission through A&E is not ideal. Beds may be unavailable. No admissions came via CAMHS and presenting BMI centile was not always in the higher risk category. Perhaps a lack of awareness of CAMHS among parents/G.P.s/schools contributes to this picture. The hospital should not be the first port of call unless the child is medically unstable. The relatively high male showing corroborates recent research indicating increased male prevalence. Girls are presenting to hospital sooner post onset than boys which could suggest better awareness and detection of AN in girls. It is a concern that the overall mean age of onset was estimated at 6 months prior to seeking treatment. Onset of AN in childhood without prompt intervention may worsen prognosis and weight restoration is more challenging as energy requirements can be greater at low weight. Early detection and treatment in the community would be preferable to later hospitalisation. Presentation age in this study is estimated at 13.5yo which is 6 mo earlier than 2002 estimates suggesting AN is presenting at an earlier age. The large increase in admissions to CUH over the past decade mirrors UK figures indicating AN is an area of evolving and increasing service needs particularly in the paediatric setting.

There is no consensus on what BMI centile necessitates hospitalisation. The Royal College of Psychiatrists suggest that anything lower than the 2nd centile is probably appropriate¹¹. The admission BMI centile for girls fell into this category. Boys, presenting on 9th, were just outside. Weight gain rate during admission has been considered a significant predictor of outcomes. As described in the results, the recommended weekly gain was achieved weeks 1-8. The average weekly gain was >800g which is associated with better prognosis. Given the high cost of keeping a child in hospital it is important to ensure maximal and consistent weight gain. Given poorer weight gains seen in latter weeks there may be little benefit in a prolonged admission. However, numbers were small so this should be interpreted with caution. Most patients were food restricting on admission, therefore, achieving dietary compliance and weight gain with this group was a challenge that appears to have been

achieved. Over-exercising (>2hrs/day uncontrolled exercise) prior to admission put patients in the high risk category as defined by the Junior Marsipan group⁷. This was controlled during admission by close supervision. Constipation was common during admission. It is important to be mindful of this due its' effect on an already dulled appetite and also the effect of impaction on weight. Treating constipation can be challenging as it is inappropriate to prescribe laxatives or exercise. Prune juice was used to good effect in CUH.

A number of patients had commenced orthodontic treatment prior to onset of AN. When braces are fitted and frequently adjusted, the teeth loosen and move causing pain. Oral pain must be considered in cases of unintentional weight loss which could later precipitate disordered eating. Sometimes dental professionals may discourage certain foods if they interfere with treatment which the "perfectionist" child may over-interpret. Although no Irish figures are available on the prevalence of orthodontic treatment there is UK data estimating that 14% of all 15 year olds have orthodontics¹². In our study 35% would seem to be disproportionately high. Future research should explore the relationship of orthodontics to weight loss. The average length of hospital stay is more than 5 weeks. Inpatient stay is expensive and requires much resource in terms of staff training and MDT input. Education sessions have been arranged for staff to raise awareness of the strict nature of caring for a child with AN on the ward. The ill child with AN may try to manipulate the meal plan with less experienced or new members of staff. It is vital that the child not feel they are colluding and thus controlling aspects of their care. 10/20 (50%) of this group were commenced on psychotropic medication due to entrenchment in anorexic thoughts. The more difficult co-morbid anxiety/depression may be responsible for the significantly longer hospitalisation in this group.

While AN is best treated in the community it is most successful when the illness is in the early stage. In this study, onset of illness does appear to significantly predate hospitalisation. Awareness at a community level of the signs and symptoms of AN may facilitate earlier treatment and negate the need for hospitalisation. It is important to be aware of the trend towards younger onset of AN and also the increasing incidence in boys. AN may look different nowadays and we must be ahead of the curve given its' high mortality rate. The dramatic increase in AN presentations in CUH in the past decade may be mirrored nationally and this will have implications on community and acute services. Provisions will certainly need to be made in the planning of the new paediatric hospital for dedicated beds and also specialist medical, nursing and dietetic posts. Overall, treatment of AN in CUH is successful with optimal weight gains and dietary compliance achieved during stay.

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General Practice Career Intentions among Graduate-Entry Students: A Cross-Sectional Study at Ireland's Newest Medical School

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Abstract

Increased care provision and clinical activity in General Practice in Ireland will have important manpower implications. Recent developments in medical education policy including the introduction of graduate-entry medical degree programmes may help address this issue. The aim of this study was to determine GP career intentions among students on an Irish graduate-entry medical degree programme and to identify factors that influence these. An electronic cross-sectional study of students at University of Limerick Graduate-Entry Medical School (UL-GEMS) was undertaken. We received 139 replies (78% response rate). 41 (29%) reported GP was their current preferred career choice, while 29 (19%) reported it was their preferred career choice on entry to medical school. This first study to present data on GP career intentions among graduate-entry students in Ireland highlights the specialty as a popular preferred career choice among students, both on entry to, and during medical school. The study also identifies factors which are likely to be important in determining career intentions. Further research to examine this issue at other graduate-entry medical schools in Ireland and to determine whether our findings are pursued over time amongst graduates is a priority.

Introduction

The introduction of graduate-entry medical degree curricula in Ireland is an exciting policy development with many challenges and opportunities.¹ In response to Ireland's anticipated manpower shortage in General Practice,^{2,3} the report of the Postgraduate Medical Education and Training Group (the "Buttimer Report") recommended an increase in the number of specialist training places in general practice.⁴ With the availability of GPs expected to decline further in the next decade (with a high proportion retiring by 2020),⁵ Ireland's population predicted to rise by 47% between 2010 and 2060⁶ and the number of GP consultations predicted to increase by one-third by 2021,⁵ this policy was timely. Thus, encouraging new graduates to pursue a career in general practice is a priority and educational innovations that help achieve this goal are of value.

It is unclear whether graduate-entry programmes have succeeded in this regard. To date no data has reported the GP-related career intentions of graduates of such programmes in Ireland. Previous research from the UK suggests that increasing graduate-entry to medical schools may increase the percentage of doctors who want to become GPs and that this effect is age-independent.^{7,8} An additional key feature of the curriculum at UL-GEMS is increased student exposure to General Practice. In other settings, such exposure increases interest in General Practice as a career choice, but it is unclear whether this is a transient finding or one that results in a sustained influence on career choice.^{9,10} An Australian study noted that appropriately timed, relevant and positive exposures to general practice during medical training, may lead to more students considering it as a career.¹¹ These issues prompted the researchers to undertake a study to provide insight into the career intentions of current students and the factors that determine these choices.

Methods

We conducted a cross-sectional study, involving an online questionnaire survey of students in Years 1 and 4 of the MB BS

degree programme at UL-GEMS in Semester II of academic year 2011-12. Established in 2007, UL-GEMS operates a four-year graduate-entry only programme. All students in Years 1 and 4 of the programme (N=179) were sent information on the study with an attached invitation to participate through an online link to the questionnaire. There were no specific exclusion criteria. Brief information sessions with both classes were given so as to inform them of the study's aims with a view to maximising response rates.

The questionnaire content was informed by previous studies of undergraduate medical students and by a pilot study.^{12,13} The questionnaire elicited information on demographics, exposure to General Practice and career intentions. Participants in the study were asked to indicate how important possible factors were in influencing career intentions on a five-point Likert¹⁴ scale (where 1=not at all important and 5=very important). A free-text section was also included to identify any other influential factors not mentioned in the questionnaire. All students would have had exposure to general practice through either the Early Patient Contact Programme (EPCP) which is delivered in Year 1 and 2, or through the Year 3 General Practice module, which includes a one-semester 18 week clinical placement in an affiliated teaching practice. Descriptive analyses were performed using Microsoft Excel/PASW (SPSS). The effects of key variables on career intentions were examined by comparing median scores on a Likert scale. The study was reviewed and approved by the UL Faculty of Education & Health Sciences Research Ethics Committee.

Results

Characteristics of Study Population

We received a total of 139 valid replies (78% response rate), of whom 82 (59%) were female, 99 (72%) were EU citizens, 80 (58%) were aged 25-29 and 72 (52%) had a Life Sciences primary degree.

Career preferences

A total of 114 (82%) of students had an opinion on current career

Table 1 Career choice of students: both prior to commencing graduate-entry medicine training and current choice at time of questionnaire

Career Choice	Prior to Graduate-Entry Medicine Number (%)	Current Number (%)
General Practice	26(19)	41(29)
Medicine	11(8)	22(16)
Surgery	10(7)	15(11)
Paediatrics	10(7)	12(9)
Obstetrics & Gynaecology	3(2)	10(7)
Emergency Medicine	7(5)	9(6)
Psychiatry	3(2)	3(2)
Radiology	1(1)	1(1)
Pathology	1(1)	1(1)
Anaesthesia	1(1)	0(0)
Don't Know	66(47)	25(18)
TOTAL	139(100)	139(100)

choice; 41(29%) reported General Practice was their current preferred career choice, followed by Medicine (16%), Paediatrics (11%) and Surgery (9%). A total of 71(51%) reported a preferred career option prior to commencing medical school, 26(19%) reporting this was General Practice, followed by Medicine (8%), Paediatrics (7%) and Surgery (7%) (see Table 1).

Factors that influence career choice (See Table 2)

Job satisfaction, lifestyle choice, and work that allows for family commitments were the most important factors among respondents who wished to pursue a career in General Practice. Other factors

which rated as being more important among students who wished to pursue a career in General Practice included: flexible working arrangements (ranks 5 versus 13), duration of specialist training (ranks 7 versus 16) and practice in the community (ranks 11 versus 20). For those choosing alternative specialities job satisfaction also ranked highest, while enthusiasm/commitment to the speciality (ranks 2 versus 6), experience as a student (ranks 7 versus 14) and self-appraisal of own skills/aptitudes (ranks 4 versus 12) all ranked higher. Thematic analysis of free text answers identified other factors as important in determining career preference, including: competition to enter specialist training, availability of speciality training, stress in the speciality, interaction with clinical teams while on placement and job security.

Table 2 Career Influencing Factors & Rankings The factors (in rank order) that influenced career choice in those respondents indicating a preference for general practice and also how these factors ranked for those who opted for other specialities. Accompanying each factor is the mean Likert score (ranked 1-5 where 1 = not at all important, 5 = very important). The factor ranking is included in parentheses.

Career Influencing Factor	How Important is this factor in determining your career choice (Median score [rank])		
	GP is current preferred career choice N = 41	Other discipline is current preferred career choice N = 92	Total population N = 139
Job satisfaction	4.59(1)	4.60(1)	4.59(1)
Lifestyle choice e.g. flexible hours, location and working conditions	4.48(2)	3.30(11)	3.68(8)
Work that allows for family commitments	4.43(3)	3.41(9)	3.73(6)
Variety in day to day clinical practice	4.07(4)	3.92(3)	3.96(3)
Flexible working arrangements	4.02(5)	3.20(13)	3.45(12)
Enthusiasm / Commitment to the speciality	3.98(6)	4.07(2)	4.04(2)
Duration of specialist training	3.83(7)	2.79(16)	3.16(14)
Professional autonomy	3.83(7)	3.80(5)	3.80(4)
Holistic / Personal care	3.78(9)	2.98(15)	3.23(13)
Capacity to develop a special clinical interest	3.68(10)	3.75(6)	3.73(6)
Practice based in the community	3.65(11)	2.31(20)	2.75(18)
Self-appraisal of own skill / Aptitudes	3.63(12)	3.84(4)	3.79(5)
Respect from patients	3.56(13)	3.41(9)	3.47(11)
Experience as a student	3.50(14)	3.63(7)	3.61(9)
Potential income	3.04(15)	3.04(14)	3.05(15)
Inclinations before medical school	3.02(16)	2.72(17)	2.80(17)
Influence of a clinical tutor in G.P	3.00(17)	1.92(21)	2.25(21)
Advice from others	2.93(18)	2.60(19)	2.73(19)
Working in a hospital environment	2.73(19)	3.45(8)	3.53(10)
Promotion / Career advancement prospects	2.49(20)	3.24(12)	3.00(16)
Influence of certain lecturer/teacher	2.29(21)	2.68(18)	2.57(20)
Influence of my own family doctor / G.P.	2.15(22)	1.65(22)	1.83(22)

Discussion

The first study to offer an insight into the current thinking among graduate-entry medical students in Ireland, indicates that 29% of students on a graduate-entry programme with a strong General Practice component intend to pursue a career in General Practice, with 19% of students reporting this as their preferred career option on entry to medical school. These findings mirror those of Lambert et al who identified that 29% of first year qualified doctors surveyed between 1993 and 2009 had general practice as their chosen career choice.¹⁵ In this UK study, this figure was seen to rise to 31% and 35% after respondents were resurveyed after 3 and 5 years post qualification respectively. This Irish study therefore identifies that General Practice is as popular a career choice for students on a graduate-entry programme as among recently qualified doctors in the UK. While factors such as job satisfaction, enthusiasm/ commitment for the chosen speciality, daily practice variety and professional autonomy were important in determining career preference among all students, among those who indicated that General Practice was their intended career speciality, lifestyle choice (median score 4.49 compared to 3.68), work that allows for family commitments (4.43 compared to 3.73) and flexible working arrangements (4.02 compared to 3.45) all scored higher. This study thus confirms the importance of factors outside of the work environment, in those pursuing a career in general practice.

Other influential factors that students identified allow a unique contemporary insight into issues that are important to them. Availability of spaces on specialist training schemes and difficulty accessing these are important issues. This first study to present data on General Practice career intentions among students on a graduate-entry programme in Ireland highlights General Practice as the most popular career choice among such students, both at entry to medical school and during the programme. This study suggests increasing student exposure to General Practice may increase the number of medical graduates who wish to pursue a career in this discipline and identifies important factors that influence career choice. That this study was conducted at one medical school is a methodological consideration that may limit the generalisability of our findings; though enacting the study at one site is likely to have contributed to the high response rate and yielded data on a unique student group. Nonetheless, we suggest further research at other medical schools to involve different student populations. Such research should adopt both cross sectional and longitudinal approaches to determine if these career intentions are pursued over time and will be of value in informing future manpower planning.

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Epidemiology of High Falls from Windows in Children

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Abstract

Falls from a height result in significant morbidity and mortality worldwide. Targeted prevention strategies in the US combined data collection, publicity campaigns and building regulation and reduced high falls in New York by 93%. This retrospective cohort study describes children who fell from a height presenting or referred to Children's University Hospital Temple St. over a 2 year period. Case ascertainment was through the Emergency Department Symphony registration system and the Trauma Area Research Network (TARN) database. Forty five falls were identified, 33 falls (73.3%) were in children less than 5 with boys being three times more likely to fall. Forty four falls were from windows, 31 from < 12 feet and 7 were witnessed. Injury severity Scores (ISS) correlated to height of fall; both deaths fell from >24ft. A publicity campaign is warranted to highlight the frequency of injury following falls from windows. Building legislation is required to safeguard high windows and balconies. A post fall questionnaire would enable the collection of unbiased forensic data.

Introduction

In Ireland, injury is the leading cause of death in children and adolescents age 0-19 years. Unintentional injuries contributed to 19.41% of child and adolescent mortality in Ireland¹. Falls are one of the commonest causes of presentation to the emergency department. They are the leading cause of unintentional injury in children under 14 in the United States². In Australia they account for 41% of hospital admissions and 43% of accident and emergency presentations due to injury in children³. In developing countries they account for up to 25% of inpatient paediatric hospital admissions⁴. Targeted safety programs have been shown to be effective in urban areas. In New York city the "Children Can't fly" program consisted of an extensive educational program, the distribution of free window guards and legislation mandating owners of multiple dwellings where children reside to provide window guards⁵. This initiative led to a 96% reduction in the incidence of unintentional window falls over a ten year period. The same program showed an 83% reduction in falls in Boston⁶. Building regulations in the UK are not explicit to children but state that balconies and stairs should be guarded with barriers so as to protect people from falling⁷. Trauma and injury research group in Victoria have recommended for specific legislation around building safety for windows and balconies⁸.

Comprehensive data collection with respect to childhood injuries provides the necessary information to inform prevention strategies and enact change. It is the role of trauma centres to collect and collate such data⁹. Validated scoring systems such as ISS (Injury Severity Score) are in use in international databases such as TARN (Trauma Audit and Research Network) and allow comparison of trends and outcomes. Local data enables targeting of vulnerable populations and locally relevant risk factors⁶. Data collection by public health nurses and social workers following a fall was a central part of successful programs in urban United

States⁵. There is also a role for data collection in prevention. The NICE guidelines on injury prevention to children in the home recommend community and household surveys to identify vulnerable homes¹⁰. The aims of this study were to quantify the morbidity and mortality associated with high falls in presenting to an Irish tertiary emergency department and furthermore to use available data to describe the circumstances of these fall in order to inform prevention messages.

Methods

The study cohort was made up of all children treated in the Children's University Hospital Temple St. from January 2010-September 2012 who had fallen from a height. There was no set definition for "fall" with patient, parent or proxy reporting accepted. There were two main methods of data collection. The Emergency Department clinical management system Symphony was searched for the words "window", "height" and "fall" under the categories triage, diagnosis and discharge. A further seven patients were identified from the TARN database. This is an international database to which the Children's University Hospital contributes data. Patients included in this database are deaths due to trauma, trauma patients admitted to a critical care area who are inpatients for > 72 hours and those who are transferred in for specialist care. Patients entered on the TARN database are allocated severity scores based on injuries sustained. This allowed capture of a further 7 patients transferred directly to the Intensive Care unit or the neurosurgical service. Data were entered in to Excel for Mac 2011. Descriptive and demographic data were sought.

Results

There were 45 high falls from windows in this time period. Thirty three were male and 12 female with a Male:Female ratio of 3:1 ratio. Thirty three (73.3%) falls were in the age group 1 to 5 years, 4 (8.9%) were between 6 and 10 years old and 8 (17.8%) were

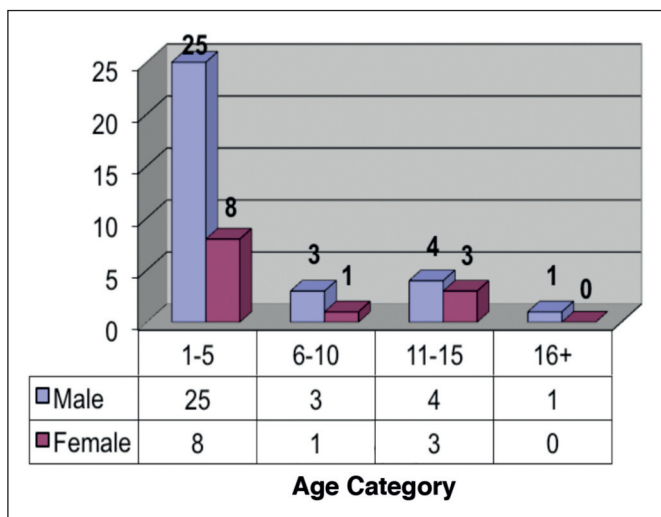


Figure 1 Male: Female ratio by age group

Table 1 Circumstance of falls	
Fall witnessed by caregiver	Yes = 7 No = 26 Not documented = 9
Location of fall	Window = 44 Balcony = 1
Height of fall	0 – 12 ft = 31 12 – 24 ft = 13 >24 ft = 2
Landing Surface	Concrete = 11 Fall broken i.e car / hedge = 4 Grass = 1 Glass conservatory = 1 Not documented = 27
? Intentional	"Jumped" = 10 Established suicidal ideation = 3

Table 2 Injuries sustained	
Injury sustained	Number (%)
Head Injury	13 (28.9%)
Fracture	8 (17.8%)
Multiple injuries	6 (13.3%)
Normal child / No injury	6 (13.3%)
Unclassified	4 (0.9%)
Laceration	1 (0.2%)

over 10 years of age. The male: female dichotomy was most marked in the early age group as shown in Figure 1. Information was sought on the circumstances surrounding the falls. In 10 cases the child was described to have "jumped" from a height. Three of these cases were associated with suicidal ideation. Table 1 provides detail regarding location, supervision, height and landing surface of falls. Documentation of the circumstances was incomplete in 5% of cases with respect to level of supervision and in 60% of cases with respect to landing surface.

Five patients were transferred from other hospitals direct to the Intensive Care Unit (ICU). Seventeen were admitted from the emergency department for observation and treatment. Of the twenty patients discharged home from the emergency department only five required follow up; 3 fracture clinic, one plastic surgery outpatients and one Medical Social Work department. There were two deaths; one in the ICU and one where death established on arrival to emergency department. Both had high window falls from a second floor window or above (greater than 7.35 metres). Of the two deaths, both had multiple injuries and significant brain contusions. Details of injuries sustained in surviving children can be seen in Table 2. Children eligible for inclusion in the TARN database have Injury Severity Scores allocated. Extent of injuries as measured by the ISS was directly associated with the height of the fall.

Discussion

In our study falls were mostly (n=31) from under 12 feet. It is a common misperception that significant falls occur predominantly from apartments or high rises⁶. There was a significant burden of injury in falls from this height with eight head injuries including four skull vault fractures, 2 subdural bleeds and two cerebral contusions. There were also five extremity fractures from this height. There is a documented association between height of falls and severity of injury¹¹. This was also evident in our cohort as the two deaths had both fallen more than 24 feet. As previously described, males under five were the group most at risk of a high fall. This is borne out in

the literature in both local and national level epidemiological data^{2,12}. Within our population there is a second distinct at risk group made up of children where there was an intentional component to the fall, either behavioural or suicidal (n=10). Prevention strategies need to recognize these distinct groups.

Identifying circumstances surrounding a fall are essential to the formulation of local prevention strategies. As part of the successful American prevention programs individual risk assessments were conducted after a fall⁵. This allowed identification of risk factors such as low-lying windows, balcony design faults, items of furniture placed near windows and supervision levels to be identified and targeted. There was very limited forensic information on circumstances of falls in our dataset. Supervision was documented in 33 cases with only 7 falls being witnessed by a caregiver. Parental education re supervision requirements is obviously a key prevention strategy. The limitations of our study are its cross sectional nature and reliance on self-report for data. This is a recognized problem in injury data collection¹³. There is also a lack of information of forensic issues around falls, limiting its utility in injury prevention. A major strength is the use of two datasets to capture all significant falls. Reliance on emergency department presentations will miss a significant number of falls patients who are transferred in or who may die at the scene².

Childhood falls in Ireland are most frequently from first floor windows and are not witnessed by caregivers. Education campaigns may be helpful in this regard. There is a lack of forensic data to inform structural risk factors for falls. However there is little doubt that prevention strategies such as window guards and building legislation have been effective in other jurisdictions.

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When Doctors go on Strike, Where do the Medical Students go?

Sir

In October of 2013, the Irish Medical Organisation (IMO) took industrial action by going on a one-day strike that affected all the country's public hospitals¹. This marked the first doctor strike in Ireland in over 25 years. While the IMO took many precautions to limit the danger to patients, medical students around the country received very little information and instructions.

Leading up to the industrial action, medical schools from across the country collected over 2500 signature in a petition showing support to the junior doctors and advocating for better working conditions². Medical students are concerned about the working conditions that they will be facing in the near future and troubled by the depiction of the lifestyle of a junior doctor by McGowan³, where junior doctors feel undervalued and unappreciated on a daily basis. On the eve of the planned industrial action, the vast majority of medical students had received no official statement. This resulted in many invigorated students coming up with a vast variety of opinions on how students should conduct themselves throughout the strike. Some were promoting non-attendance and others thought they should do nothing differently on the day. Some students even thought it was appropriate to join the picket line themselves, which was quickly corrected.

Students were put in a difficult position. They had to choose between their education and their principles. Many students wanted to make a gesture of support to their future peers and colleagues and felt that proceeding with clinical activities as normal would be taken as a show of opposition to the cause. Students were also concerned about the expectations of consultants during the strike. Would medical students be expected to take up some of the slack? Again, although this may

have been an opportunity to increase their clinical competency, many of their peers would have taken this to be act of opposition.

With future industrial actions a possibility, it is imperative that medical schools collaborate together and create a policy for the behaviour of medical students throughout industrial action. When creating this policy it is imperative that academic staff take into consideration that many students are passionate about the cause, as it will directly affect them in the near future. Adopting a position that is rigid and inflexible may result in medical students blatantly disregarding their instructions. At the very least, medical schools should strive maintain an open line of communication with the student body.

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Response

Sir

The Irish Medical Organisation is unique among medical representative bodies in that we represents doctors from the time that they first enter medical school, through their whole professional career in which ever specialty they wish to work in and then we continue to represent them following retirement. Medical Students form an important part of the organisation as they are the doctors and members of the future.

The national one day NCHD strike was a necessary an important action given the conditions that Irish NCHDs are expected to tolerate day after day and the risk this places patients. Medical Students are not employees of the hospitals that they are attached to and as such are not in a position to take a formal industrial action against the hospital. Of course Medical Students have a valid a vested interest in the outcomes of any such actions given that it is only a short time before they will be working under the conditions which are agreed following any such action. For this reason the NCHD committee has established close liaison with representatives of the student body so as to have a link between NCHDs and Medical Students.

The Irish Medical Organisation currently offers Medical Student membership at no cost. Members are able to attend information events and via the web-site can remain informed of the

organisations activities. They can informally support their NCHDs colleagues in a similar way that Consultant, Public Health and General Practice doctors did during the industrial action by providing psychological and at times practical support without becoming part of the formal action. IMO Student Members received full communication in relation to the strike and we advised that they could attend picket lines to show solidarity with the members on strike, but could not actually picket the premises – the same as any other non-employee. Indeed we would like to thank the many students who not only signed the petition but turned up on the day to demonstrate support.

Regarding Medical Students performing any tasks that would normally be carried out by NCHDs during an industrial action this is obviously totally inappropriate as students not being qualified are not in a position to shoulder the responsibility that would be expected of a qualified medical practitioner. Medical Students should continue their usual academic activities during the action to ensure that the Irish Universities can maintain the exceptionally high standard medical graduates that they have traditionally produced. Hopefully there will be an equally high standard medical service ready for them to practice their skills in.

M Sadlier

President, Irish Medical Organisation

An Audit of A&E Referrals to Fracture Clinics at the University Hospital Limerick

Sir

Decreasing healthcare budgets¹ are pressuring orthopaedic services to create efficient pathways of care such as the care of fractures referred from the A&E department. Since the referrals to these clinics are what determine a large proportion of the patient population, the clinical validity of these referrals contributes to the efficacy of these clinics. This begs the question, are the referrals to fracture clinics leading to any decrease in the clinical efficacy of this service?

Methods

101 consecutive patients referred from the A&E to UHL orthopaedics fracture clinics between September and October 2012 were retrospectively included. A retrospective chart review was conducted. Reason for referral, physician's level, diagnosis in clinic and intervention were recorded. True positives (TP) were referrals requiring orthopaedic follow-up or treatment. False negatives (FN) were referrals requiring no follow-up from the orthopaedic services. Positive predictive values (PPV) were calculated from these values.

Table 1 Left – Injuries seen in outpatient orthopaedic clinic with N greater or equal to two. Center – Injuries stated on referral that were deemed to be false positive referrals. Right Upper – The level of the referring health care professional for all referrals and positive predictive values (PPV) for each level. Right Lower – The level of the referring health care professional for false positive referrals.

Injury by Anatomical Site		Injuries of False Positive Referrals		Level of Referring Physician		
Body Part	N	No Intervention	N	Level	N	PPV
Metacarpal Fracture	14	Metatarsal Fracture	5	SHO	16	93.8%
Radial Fracture	12	Soft Tissue Elbow	3	REG	56	82.1%
Clavicle Fracture	11	Radial Fracture	3	Consultant	6	83.3%
Humerus Fracture	10	Metacarpal Fracture	3	Clinical Nurse Spec.	10	60.0%
Metatarsal Fracture	7	Scaphoid Fracture	1	Undocumented	20	85.0%
Scaphoid Fracture	5	Acromioclavicular Sprain	1	Level for False Positives		
Shoulder Dislocation	5	Ankle Sprain	1			
Fibula Fracture	4	Achilles Strain	1	SHO	1	
Vertebrae Fracture	3	Clavicle Fracture	1	REG	10	
Ankle Sprain	3	Wrist Sprain	1	Consultant	1	
Ulna Fracture	2			Clinical Nurse Spec.	4	
Acromioclavicular Sprain	2			Undocumented	3	

Results

101 patients; 81.2% (82/101) TP and 18.8% (19/101) FN. The PPV for SHO, registrar consultant and clinical nurse specialists (CNS) were 93.8%, 82.1%, 83.3% and 60.0% respectively. 36.8% (7/19) of the FP referrals had no evidence of fractures clinically or radiologically when examined in outpatient clinics. 19.8% (20/101) of all referred patients were referred for sports related issues.

Discussion

Guidelines currently exist for fractures with sensitivities of

98-100% (Ottawa ankle rules)². However, these guidelines emphasize high sensitivities and negative predictive values (NPV) with low specificities and PPV to ensure fractures are never dismissed. The Ottawa ankle rules have demonstrated PPV of 0.25³. UHL demonstrated an overall PPV of 81.18%. In contrasting the PPV of previous studies our results demonstrate a high level of precision. Yet, there is still room for improvement. 70% of metatarsal fractures referrals were false positive (PPV 25.6%). The contrast in the PPV of metatarsal fractures to the overall PPV exemplifies a potential area for improvement. 36.84% (7/19) of the false positive referrals had no evidence of a fracture radiologically or clinically. These were non-scaphoid suspected fracture referrals. Thus, a third of the false positive referrals could be eliminated with accurate elimination of fracture in the A&E. 52.6% of false positives were referred by registrars (PPV 82.1%), 21.1% were clinical nurse specialists (PPV 60%) and 5.3% were SHOs (PPV 93.8%). This suggests that our results were not reflection of inexperienced doctors. Rather a reflection of the quantity of referrals from a given physician level rather than the quality. One possibility to increase efficiency is the creation of more specialized clinics⁴. The only group of injuries significantly large enough to benefit from a specialized clinic would be sports injuries.

We recommend the development of referral guidelines. Focus should be on low clinical efficient injuries (metatarsal, radial and metacarpal fractures and elbow soft tissue injuries). As well, guidelines for injuries that do not require orthopaedic follow-up could help streamline patients to other services. There is potential for the development of specialized sports injuries clinics.

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Imaging findings in emphysematous gastritis

Sir

Emphysematous gastritis is a rare and often fatal disorder occurring when there is diffuse infiltration of the stomach wall by pathogenic gas-forming bacteria. It is associated with mortality rates over 50%. We present a case of emphysematous gastritis with radiological findings enabling us to distinguish from similar benign conditions such as gastric pneumatosis and interstitial gastritis, which was managed conservatively with a successful outcome.

Case Report

A 73 yr old woman underwent a mechanical mitral valve replacement and tricuspid valve repair this year. She had a difficult postoperative course, developing ischaemic hepatitis and systemic inflammatory response syndrome due to prolonged cardiopulmonary bypass. One week postoperatively she had a respiratory arrest and required re-intubation and ventilation. On day 15 postoperatively, she was noted to be tender in her right



Figure 1
Axial view of CT Abdomen showing portal venous gas and emphysematous gastritis



Figure 2
Coronal view of the CT abdomen demonstrating portal venous gas (large arrow) and emphysematous gastritis (small arrows)

upper quadrant. Gastric aspirates were high and she had diarrhoea. An urgent CT abdomen was performed which showed multiple pockets of submucosal air within a distended stomach. Thickening of the posterior stomach wall could be seen on axial imaging (Figure 1) with a focus of low attenuation adjacent to the left portal vein consistent with peri-portal gas. Radiologically the appearance of submucosal gas within the stomach is identical to gastric emphysema- a benign and asymptomatic condition. The associated peri-portal gas is a concerning finding indicative of a sinister underlying pathology. These radiological features are suggestive of emphysematous gastritis and are consistent with those found in patients with underlying infectious, caustic and ischaemic aetiologies.

She was treated with broad spectrum antibiotics, kept nil by mouth and her nasogastric tube was left on free drainage. Total

parenteral nutrition was administered. She was found to have avancomycin resistant enterococcus on culturing a stool sample. She improved with conservative management and a CT one week later showed resolution.

Discussion

Emphysematous gastritis occurs when there is diffuse infiltration of the stomach wall by pathogenic gas-forming bacteria. The gas is formed within the stomach wall. It is often a fatal disease with mortality rates quoted as greater than 50%.¹ Causes include ingestion of corrosive substances, alcohol abuse, gastric infarction, trauma and necrotising enterocolitis. Infection occurs with gas forming organisms from local or via haematogenous dissemination². The stomach is usually a very uncommon site of infection due to its abundant blood supply, acidic pH and efficient mucosal barrier³. Most frequently isolated organisms are *Streptococci*, *Escherichiacoli*, *Enterobacter* species, *Pseudomonas aeruginosa* and *Clostridiumperfringens*⁴. Antibiotic therapy covering anaerobes and gram-negative bacilli, intravenous hydration and appropriate nutrition is the mainstay of treatment. This condition is distinguished from gastric pneumatosis or gastric emphysema which occurs when there is a disruption of gastric mucosa and air dissects into the stomach wall. This is a much more benign condition, patients are usually asymptomatic and it can be found with gastric outlet obstruction, post gastroscopy, or dissection of air from the mediastinum with ruptured bullae or a pneumothorax. Radiological findings of air in the stomach wall as well as portal venous gas are suggestive of the more sinister emphysematous gastritis.

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Height in Turner Syndrome: Does Growth Hormone Therapy Have Impact?

Sir

Short stature is a cardinal feature of Turner syndrome. We examined height outcome and its relation to growth hormone therapy in Irish girls with Turner syndrome. In those with Turner syndrome (TS), the adult stature average 20 cm shorter than the general population¹. By 15 years of age, the average height of an untreated girl with TS is equivalent to that of only a 9.5-year-old girl in the general population². We therefore set out to describe height outcome in Irish girls with TS. The impact of growth hormone (GH) therapy on height was also examined. Ethical approval was obtained from our local hospital ethics committee. Height measurement was taken according to the standard guidelines. Mean height standard deviation scores (SDS) was calculated. Fisher's Exact test was used to compare groups and the association between the height and age at GH initiation or duration of GH therapy and was assessed using regression analysis.

In total, 32 out of 35 girls agreed to participate. Mean (SD) age was 16.7 (2.6) years. Compared with age- and sex-matched Irish general population³, subjects with TS were shorter, with height SDS being -2.1 (p value 0.00). Irish girls with TS are taller (mean height SDS 1.59; p value 0.000), compared with previous published data on height in girls with TS (4). The mean (SD) height did not differ between girls with monosomy X, those with mosaic without structural X abnormalities and subjects with structural abnormalities with or without mosaicism (p value 0.08). Of 32 girls, 28 received GH therapy, of whom mean height SDS increased from -0.22 (at time of GH initiation) to 1.59 (mean duration of GH therapy 7.5; SD 3.7 years) compared with previous published data on height in untreated girls with TS⁴, (p value 0.00). However height increased from -3.1 SDS to -2.1 SDS, compared with age- and sex-matched Irish general population (3), [p value (P) = 0.005]. This finding is similar to the previously

published findings that GH therapy has a positive impact on height in girls with TS. The results of the regression analysis showed that there was no significant association between height and age of GH initiation [confidence interval (CI) = -0.68: 0.83; $P = 0.84$ or duration of GH therapy [CI = -0.3: 1.14; $P = 0.21$]

Girls with TS are shorter than the general population and it appears that GH therapy has a positive impact on height in girls with TS. Other previous studies have found key factors in GH response to be age onset and duration. However, the relatively small number of patients in our study precludes any definitive statement about the impact of age at GH initiation or duration of GH therapy on height.

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OBITUARY

Dr. Robert A. MacCarthy

Dr. Robert (Bob) MacCarthy, who died in his hundredth year on the 11th of November 2013, was formerly Resident Medical Superintendent at Our Lady's Hospital, Cork and Medical Director of Cope Foundation. Born in Cork City in April 1914, Bob graduated in 1938 in Medicine with First Class Honours and First Place in his class and was awarded the Blayney Scholar prize. He was awarded an M.D. degree from UCC in 1940. He was admitted to the Membership of the Royal College of Physicians of Ireland in the same year.

He decided to pursue a career in psychiatry and worked in Our Lady's Hospital, Cork from 1944 to 1954 as Assistant Medical Officer. From 1954 to 1961 he was appointed Senior Assistant Medical Officer in Grangegorman Mental Hospital (St Brendan's Hospital) Dublin before being appointed as Resident Medical Superintendent in Our Lady's Hospital Cork in 1961, a hospital of over two thousand patients. His appointment was instrumental in changing the whole concept of treatment of the mentally ill in Cork. It began the process of questioning the existing regime of institutional care and sowed the seeds of adopting a fresh and challenging new policy of community care. His tenure in charge of this hospital shows a man who was ahead of his times. His enlightened and ground-breaking initiatives injected a dose of humanity into what was a harsh environment inherited from Victorian times. He strove to introduce a new era of openness, moves were revolutionary at the time.



Together with like-minded colleagues, he spearheaded the concept of re-habilitation and re-socialisation through the introduction of arts and crafts, gardening, training and living within the community for patients. He advocated a policy of re-establishing contact with patients' relatives wherever possible. He also felt that the problem of institutionalisation and isolation of the long stay patients could also be helped through the establishment of voluntary organisations, which he founded in association with others in 1962. This was the Cork Mental Health Association of which he became President. It worked in tandem and in partnership with the hospital administration in promoting and developing rehabilitation and resocialisation programmes for those in need. On the outbreak of the devastating polio epidemic in Cork in the 1950s, Bob was one of many who helped the late Councillor John Bermingham to establish the Cork Poliomyelitis and General Aftercare Association in 1959, which we now know as Cope Foundation. On his retirement from Our Lady's Hospital in 1972, he became Medical Director of Cope Foundation, a position he held until 1992.

Bob also held the position of Lecturer in Psychiatry at University College Cork from 1962 to 1972. He was predeceased by his wife Mollie and his second son Denis Robert (Bobbie). He is survived by his son Ivor, daughter Rosemarie and grand daughters Emma, Sarah and Amy.

Plenus annis abiit, plenus honoribus

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Towards a Framework for Implementing Evidence Based Alcohol Interventions

R Armstrong, J Barry. Ir Med J. 2014; 107: 39-41.

Question 1

The number of patients who agreed to participate in the study was

- a) 688
- b) 788
- c) 888
- d) 988
- e) 1088

Question 2

The number who did not need any intervention was

- a) 430
- b) 440
- c) 450
- d) 460
- e) 470

Question 3

The number who needed brief advice was

- a) 345
- b) 355
- c) 365
- d) 375
- e) 385

Question 4

The number who required referral to specialist services was

- a) 53
- b) 63
- c) 73
- d) 83
- e) 93

Question 5

The number of deaths caused globally each year by alcohol is

- a) 2.4 million
- b) 2.5 million
- c) 2.6 million
- d) 2.7 million
- e) 2.8 million

Care of Type 2 Diabetes in Unresourced General Practice: Current Practice in the Mid-West

R O'Connor, M Mannix, W Cullen, J Mullen, M Healy, J Saunders, M Griffin, G O'Sullivan. Ir Med J. 2014; 107: 43-5.

Question 1

The number of patients in the study was

- a) 812
- b) 822
- c) 832
- d) 842
- e) 852

Question 2

The mean interval since the last foot check was

- a) 502 days
- b) 512 days
- c) 522 days
- d) 532 days
- e) 542 days

Question 3

The mean interval since the last retinopathy check was

- a) 625 days
- b) 635 days
- c) 645 days
- d) 655 days
- e) 665 days

Question 4

The mean BMI (wt/ht²) was

- a) 30.4
- b) 31.4
- c) 32.4
- d) 33.4
- e) 34.4

Question 5

The HbA1c (mmol/l) was

- a) 52
- b) 54
- c) 57
- d) 58
- e) 59

Anorexia Nervosa (AN) in Inpatients at a Children's Hospital (2005-2011)

M O'Reilly, C Carr, C Boylan, M Anglim, B Houlihan. Ir Med J. 2014; 107: 53-5.

Question 1

The mean age at admission was

- a) 12.5 years
- b) 13.5 years
- c) 14.5 years
- d) 15.5 years
- e) 16.5 years

Question 2

The proportion of boys was

- a) 10%
- b) 20%
- c) 30%
- d) 40%
- e) 50%

Question 3

The mean weekly weight gain following hospitalisation was

- a) 630g
- b) 730g
- c) 830g
- d) 930
- e) 1030g

Question 4

The mean hospital stay was

- a) 34 days
- b) 36 days
- c) 38 days
- d) 40 days
- e) 42 days

Question 5

The mean time of onset prior to hospital admission was

- a) 3 months
- b) 4 months
- c) 5 months
- d) 6 months
- e) 7 months



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