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ABC of Domestic and Sexual Violence

Editors: Susan Bewley and Jan Welch

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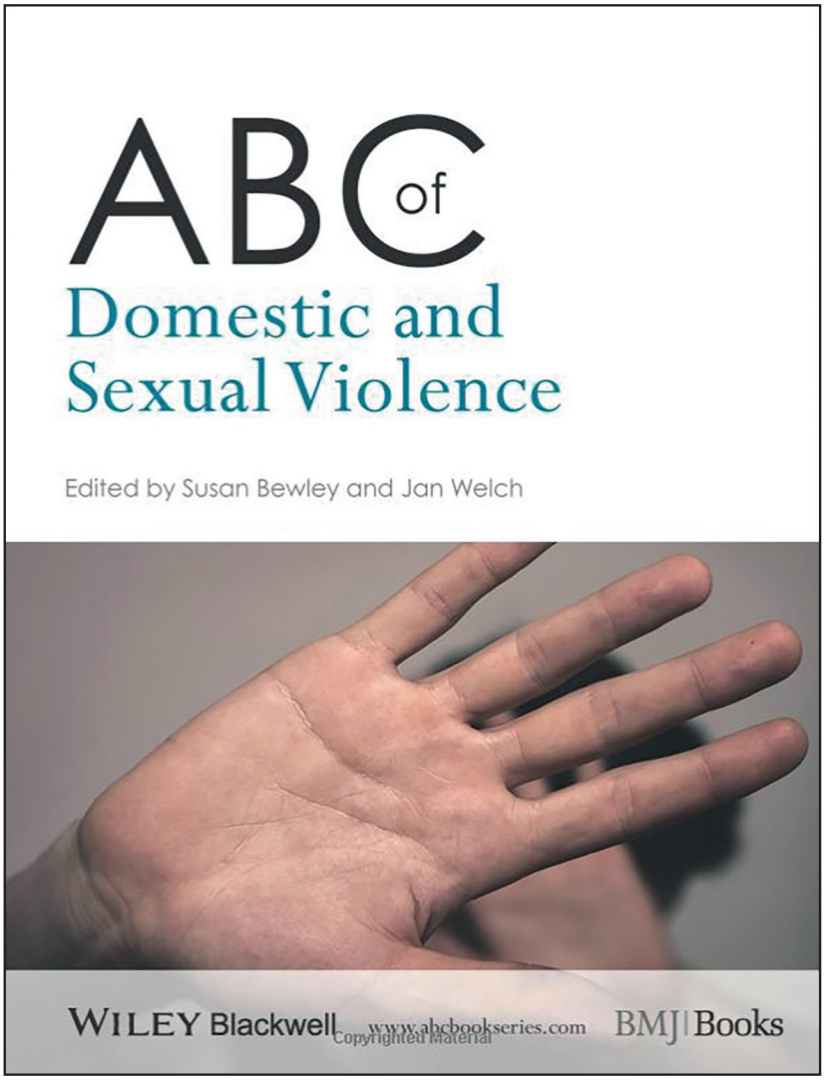

This book is an excellent review of the many issues surrounding domestic and sexual violence. The editors have many years of experience in this arena and their introduction highlights that despite its prevalence throughout societies and specialities, domestic and sexual violence feature only infrequently, if at all, on both under- and postgraduate curricula. One of their stated aims therefore was to produce a volume that they wish had existed 'when we started out'. They have certainly succeeded in this aim and have brought together a range of interdisciplinary contributors reflecting the need for multi-agency involvement if services are to be responsive to patients needs.

This is a comprehensive review of the important factors to be considered in domestic and sexual violence. Those who are familiar with the 'ABC' series will recognise the style, it is well laid out and easy to read. The chapters are succinct, with summary boxes emphasising important points. Throughout the book short case studies are interspersed to underpin learning points. As well as providing an overview on the subject there are also excellent chapters on identification, referral and support, with plenty of practical advice offered. There are also very well written sections on sexual assault of men and boys, forced marriage and human trafficking – vulnerable groups that clinicians need to be aware of in order to provide responsive care. As someone involved in providing care for patients who have experienced sexual crime and training for those who deliver the service, I thought the chapters on documentation, statement and report writing and appearing in court were well written and highly relevant. The book finishes with chapters on service development and career guidance, both vital components of a comprehensive patient focussed approach to domestic and sexual violence.

In summary this is a well written and thorough review of domestic and sexual violence which offers practical guidance to a range of healthcare providers throughout their training and professional career.

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In this Month's IMJ

Referral letters to the emergency department: Is the medication list accurate?: McCullagh et al analysed 92 referral letters, 62 computer generated and 32 hand written. The computer letters were of better quality. In half of the cases drug dose and frequency was documented. The patient's allergy status was mentioned in 14% of cases.

Table 1

Information Provided	Overall %	Letter Type: Computer-Generated %	Letter Type: Hand-Written %	Fisher's Exact Test
Dose / frequency of administration	51	71	10	P < 0.001
Drug list confirmed by medicines reconciliation	22	27	10	P = 0.065
Allergy status documented	14	18	7	P = 0.209

Table 2 Doctors' response to survey

Physician	Can OSAS be a direct cause of death?	Can OSAS be an indirect cause of death?	Have you ever recorded OSAS as a cause of death on a death certificate?
NCHDs (n=76)	34 (45%)	76 (100%)	0
Respiratory Consultants (n=34)	18 (53%)	33 (97%)	7 (21%)
Consultant Pathologists (n=14)	4 (29%)	14 (100%)	0
Consultant Cardiologists (n=36)	12 (33%)	30 (83%)	6 (17%)
	+ 3 (8%) unsure + 2 (6%) possibly		
SpR, Cardiology (n=25)	7 (28%)	24 (96%)	9 (36%)
Total (n=185)	**75 (41%)**	**177 (96%)**	**22 (12%)**

Can you die from obstructive sleep apnoea syndrome (OSAS)?: O'Carroll et al state that OSAS affects 2-4% of adults. There is a strong association between OSAS and cardiovascular diseases. In this survey the authors found that 41% doctors believe that OSAS can be a direct cause of death and 96% think that it is an indirect cause. The CSO data 2008-2011 reveal that 2 deaths were attributed to OSAS and 52 deaths as an indirect cause.

Sickle cell disease: time for a targeted neonatal screening programme: Gibbons et al call for a targeted sickle cell disease (SCD) screening programme for newborns. A total of 77 children with SCD were included in their study. The median age of antibiotic commencement was 56 days in those who had been screened compared with 447 days in those who had not been screened. 27% of those in the unscreened group presented in a SCD crisis compared with 3% in the screened group. The number needed to screen in order to prevent a potentially fatal crisis was 4.

Table 1 Baseline Demographics and Referral Information

Category	Sub Category	Screened Population n=55 (%)	Unscreened Population n = 22 (%)	P value
Sex	Male	28 (50)	10 (45)	0.29
	Female	28 (50)	12 (55)	
Nationality	Nigeria	44 (80)	17 (85)	
	Other African Nation	9 (17)	2 (10)	
	India	2 (3)	0 (0)	
	Pakistan	0 (0)	1 (5)	
Diagnosis	Hb SS	45 (80)	19 (86)	
	Hb SC	8 (14)	2 (9)	
	Hb S-D punjab	1 (2)	1 (5)	
	Hb S-ß thal	2 (4)	0 (0)	
Median age at referral (days)		10 (2 – 1827)	456 (56 – 1659)	<0.0001*
Median number of days from referral to 1st appointment date		13 (3 – 25)	13 (2 – 23)	0.49
Median number of days from referral to 1st attended appointment		19 (3 – 218)	30 (2 – 116)	0.275
Median age at Antibiotic Commencement (days)		58 (9 – 1827)	447 (84 – 1650)	<0.0003*
Referred < 3/12		43 (65)	0 (0)	
Referred 3-6/12		9 (14)	4 (19)	
Referred >6/12		14 (21)	17 (81)	
Crisis at diagnosis		2 (3)	6 (27)	0.037*

Table 1 Healthcare professional support reported post discharge.

Health care professional	Number of parents receiving support (n=28)
Dietitian in the hospital	25
Nurse in the hospital	23
Public Health Nurse	14
Medical Nutrition Company Representative	9
Other	6
Surgeon in the hospital	4
Dietitian in community based centre e.g. CRC/St.Michael's House	4
GP	1

Hospital to home paediatric enteral nutrition- parents need support: Shortall et al report that 288 children were discharged on home enteral nutrition (HEN) 2005-2010. A parent questionnaire was devised. 39 parents responded. 74% of parents wanted a more structured follow-up and 56% would like one person to co-ordinate the HEN programme. A specialist paediatric dietician working with the HEN team is needed.

Expanding access to rheumatology care: The rheumatology general practice toolbox: Conway et al point out that musculoskeletal disorders account for 14% of consultations in primary care. The rheumatology GP toolbox is a one day course in common rheumatic disorders. Among 32 GPs all agreed that the course was appropriate.

Table 2 Participants evaluations of course. Data shown for percentage of participants agreeing or strongly agreeing on 5-point Likert scale.

	Osteoarthritis	Fibromyalgia	Gout	Inflammatory Arthritis	Osteoporosis	Back Pain	Ankylosing Spondylitis
Relevance	96%	100%	100%	100%	96%	96%	96%
Clarity	93%	96%	100%	93%	79%	89%	93%
Improved Structure	79%	93%	100%	93%	68%	89%	96%
Improved Knowledge	93%	96%	100%	100%	82%	82%	100%
New information	82%	89%	100%	82%	82%	75%	100%
Change Practice	68%	96%	96%	89%	64%	54%	79%
Increase Referrals	36%	14%	18%	39%	7%	14%	46%
Decrease Referrals	32%	79%	54%	32%	36%	64%	29%
Improve Assessment	89%	75%	89%	93%	82%	71%	100%
Empower Management	96%	96%	100%	86%	82%	86%	93%

Acute stroke unit improves stroke management- four years on from INASC: Shanahan et al report that stroke management has improved since 2008. Among 89 stroke patients 8 of the 12 key indicators scored significantly better. 92.5% had a brain scan within 24 hours, 100% of ischaemic strokes had anti-thrombotics and 94% had rehab goals agreed by MDT.

Table 2 A comparison of results found in UHL to those found in INASC

	UHL 2012	INASC 2008
Number of patients	89	2,173
Length of stay	9 days (median, IQR=11)	28.9 days (mean)
Time from stroke to scan	12:30 hours (median, IQR=22, 47 patients)	2.6 days (mean)
Received thrombolysis	8.2%	1%
Received imaging	99%	93%
Scan within 3 hours of admission	37%	4%
Scan within 24 hours of admission	92.5%	40%
Treated in stroke unit	55%	2%
>50% of hospital stay in stroke unit	31%	1%
Commenced on aspirin within 48 hours	80%	45%
Commenced on anti-thrombotic by discharge	100%	85%
Assessed by physiotherapy	87% (during admission)	43% (within 72 hours)
Swallow assessment	74% (by SALT during admission)	26% (assessed within 24 hours)
OT assessment	3%	22%
Rehab goals discussed by MDT meeting	94%	22%

Table 1 Direct access to diagnostics in the public system

	Direct Access	If yes, average waiting time in working days*		
	%	N	Range	Mean	Median
Chest Xray	99.6	120	1-22.5	4.78	2
Xray for Trauma	66.0	68	0.5-12.5	2.60	1
Abdominal Ultrasound	78.6	157	3-180	67.54	60
Pelvic Ultrasound	75.4	152	1-210	72.20	60
CT Scan Brain	28.5	51	1.5-120	43.53	30
CT Scan Chest	20.1	35	7.5-180	62.07	45
CT Scan Abdomen	18.4	31	7.5-240	72.66	55
MRI Brain	10.5	20	6-240	112.43	110
MRI Spine	10.5	18	6-180	99.36	120
MRI Musculoskeletal	9.3	21	6-360	120.40	120
Dexascan	75.1	142	5-300	104.26	90
Gastroscopy	64.0	121	0.5-130	59.27	60
Colonoscopy	57.1	113	0.5-180	68.58	60

Access to diagnostics in primary care and the impact on a primary care led health service: O'Riordan et al describe the very different access to diagnostic tests in the public and private sectors. In the public sector access is very limited with more than one fifth of GPs having no access to abdominal or pelvic ultrasound. Access to CT scans is restricted to a minority of GPs 18.4%. The average waiting times are 14 weeks. In the private sector, GPs have almost universal access to ultrasound and CT scans.

Chronic kidney disease and obesity in Ireland: comparison of self-reported coronary artery disease in population study with clinic attendees: Lannin et al point out that the triad of obesity, glucose intolerance, and hypertension is well described. The authors found that body mass index and renal function were strongly associated with the development and progression of coronary artery disease.

Table 1 Prevalence of cardiovascular risk factors comparing the Irish middle aged population in those with and without reported cardiovascular disease and the cardiac clinic sample.

	SLÁN-07 Without Self-reported Cardiovascular Disease (95% CI) N=1148	SLÁN-07 Self-reported Cardiovascular Disease (95% CI) N=59	Cardiac Clinic (95% CI) N=126
Age in Years mean (SD)	59.3 (9.7)	69.8 (9.5)	68 (10.3)
Obesity (BMI≥ 30)*	28.7% 26.1, 31.4%	45.8% 32.7, 58.9%	42.9% 33.8, 51.9%
Elevated Waist Circumference (Male:≥94cm; Female:≥80cm)*	70.6% 68.0, 73.3%	83.1% 73.2, 92.9%	77% 68.7, 83.7%
eGFR≤60ml/min/1.73 *	11.0% 9.1, 12.8%	36.4% 23.2, 49.5%	27.4% 19.4,35.4%
eGFR≤60ml/min/1.73 or Albuminuria	21.1% (18.7, 23.6)	40.4% (25.9, 55.0)	42.9% 33.2%, 52.5%
eGFR≤60ml/min/1.73 * and Albuminuria	2.6% (1.6,3.5)	14.9% (4.3, 25.5)	11.4% 5.2%, 17.6%
Albuminuria	12.9% 10.9, 14.9%	20% 8.5, 31.5%	23.6% 15.4%,31.8%
Hypertension*	55.9% 53.0, 58.8%	86.4% 77.4, 95.4%	95.1% 91.2%,98.9%
Hypercholesterolemia	79.5% 77.2, 81.9%	84.7% 75.3, 94.2%	86.95% 80.7%,93.2%
Diabetes*	7.6% 6.0, 9.1%	13.6% 4.6, 22.6%	15.4% 9.0, 21.9%
Current Smoker	18.6% 16.3, 20.9%	12.3% 3.5, 21.1%	27% 19.1, 34.8%

Table 1: Comparing 2001 and 2010-2011

	2001	2010-2011
% of presentations	0.45%	0.55%
Male	47%	53%
Drugs/Pharmaceutical	61%	51%
Most common	Paracetamol	Paracetamol
Second most common	Benzodiazepines	Liquid detergent tablets
Investigations	35%	21%
Admitted	20%	7%
Deaths	0	0

New hazards in paediatric poisoning presentations: Moore et al undertook an analysis of 478 poisoning in children. A comparison was made with a similar study 10 previously. In both series paracetamol was the commonest agent in both series. Over the 2 series investigations were reduced from 35% to 21%, and admissions from 20% to 7%.

Sweet syndrome revealing systemic lupus erythematosus: Quinn et al report a 12 year old child with SLE who presented with Sweet Syndrome. It is an inflammatory skin eruption with fever and leukocytosis. The rash which was papulo-vesicular, was located on the elbows and ankles.

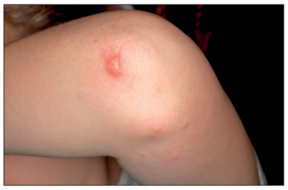

Figure 1 Papulo-vesicular rash on the elbow

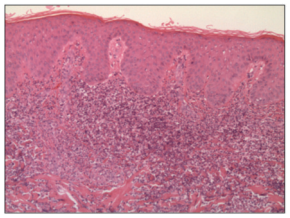

Figure 2 Skin Biopsy, Biopsy of this lesion showed neutrophilic dermatosis with massive infiltration of the dermis

Falling Litigation Rates in the US: Could Ireland Adopt Similar Measures

Medical litigation has halved in the US over the last 10 years[1]. Rates of paid claims have decreased from 18.6 to 9.9 per 1000 physicians between 2002 and 2013. The median payment awards have reduced from $ 218,400 to $195,000 between 2007 and 2013. The consequence of this improved medico-legal environment is that the insurance premiums for doctors have lowered. In some states the premiums for obstetricians have reduced by as much as 36%. The 4 factors that appear to have effected this dramatic change in American malpractice rates are- raising the barriers to bringing lawsuits, placing limitations on the sums awarded, the introduction of interim payments rather than lump sums, and 'Safe Harbors'.

The barrier to frivolous lawsuits has been strengthened. Pretrial expert screening panels review the case at an early stage and determine whether the claim has enough evidence to proceed. If the plaintiff still decides to proceed the panel's negative opinion has to be submitted to the court. At the initial filing of the allegation the plaintiff must submit an expert witness's report stating that there is a reasonable justification for the suit. The expert witnesses must be licensed in the state that the case takes place. Clearly set limits are placed on the attorney's fees.

Caps are placed on the quantum of money that can be awarded. Particular emphasis is placed on reducing the amounts paid out for pain and suffering. The introduction of the collateral-source rule reform means that compensation obtained from other sources (eg. health insurance) is deducted from the amount that the defendant has to pay out. Insurers pay interim sums of money rather than the total amount. Insurers are able to retain any amount of money that is not collected during the plaintiff's lifetime. When there are multiple defendants, the financial liability of each defendant is limited to the deemed percentage of his fault. No single defendant can be pursued for the total claim.

'Safe Harbors' are directives that give doctors a protection against litigation if they can demonstrate that they followed a recognized, agreed guideline when caring from their patient[2]. 'Safe Harbors' were introduced as a way of reducing the uncertainty created by the employment of a vague standard such as 'recklessness'. They insulate the standard of care from external interference. To be considered for Safe Harbor status the clinical guideline must be reliable, valid and clearly defined. There are many advantages to this process. It provides caregivers with a clearer picture of what is expected of them in most clinical situations. Doctors are less likely to practice defensive medicine by including tests and treatments that are not recommended by the guideline. It favours the patient because he receives better, evidence-based, care. The Safe Harbors Act 2014 proposes that US doctors subject to a medico-legal claim have the option of a review by an independent review panel who determines whether an acceptable guideline was adhered to. The process has been backed by President Obama who stated that 'the broader use of evidence based guidelines could scale back the excessive defensive medicine reinforcing our current system of more treatment rather than better care'.

The hurdles experienced with Safe Harbors are –the time and expense of producing guidelines, the difficulty in keeping guidelines up to date, and doctor resistance to following guidelines. The other point is that guidelines can aid in the planning of the investigations and treatment. They cannot protect the caregiver when there are problems in the execution of therapy such as inadvertent cutting of an artery during surgery or a drug dose miscalculation.

Sage[3] points out that a crisis is about danger and opportunity. The 1970s through to the early 2000s represented a crisis in US medical practice due to malpractice litigation. Insurance premiums for doctors had become increasingly unaffordable and unsustainable. He places particular emphasis on money and time. While injured patients should be compensated, in the case of less serious cases the covering of the cost of additional medical care is sufficient. Communication and resolution initiatives should be instituted at an early stage. Conventional litigation thrives on delay. The protracted legal transactions exacerbate the actuarial uncertainty for the defendant and his insurer. Valuable time is lost over many months or years.

This reform of malpractice litigation in the US is very welcome. It would be great if it could be translated to the Irish heath-care with its ever increasing malpractice crisis. The MPS recently stated that of the 10,000 cases it handled worldwide, 600 were from Ireland. In 2012 the number of claims had increased 2.5 times compared with 2007. In addition, legal costs and damages were significantly higher. A legal claim costing €1.26m in 1998, now costs €2.5m.

Malpractice claims in primary care are understudied. Wallace et al[4] in a systematic review of 34 studies found that the annual prevalence rate for GPs was 5.2%. By age 65 years 76% of GPs would have been sued. One third of the claims resulted in compensation being awarded. The 2 commonest causes for litigation were delay in diagnosis and drug prescribing errors. It would appear that the majority of Irish doctors can expect to be sued. The experience is distressing and challenging. There are emotional, reputation, and economic consequences.

The US has adopted far-reaching, radical measures to control the rising rates of litigation that it faced in the early 2000s. The programme of malpractice reform has had a major impact in reducing the number of claims and the sums awarded. The challenge is whether some or all of these changes to the tort system could be adopted in this country.

JFA Murphy
Editor

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Children's Television and Nutrition

The prevalence of overweight children, and hours of television viewed are positively correlated[1,2]. Causality may include greater periods of inactivity and exposure to food advertising and product placement while watching television. The American Academy of Pediatrics recommends a maximum of 2 hours of non-educational television viewing per day for children over 2 years[3]. However, recent evidence suggests that children aged 6-11 years watch 24.5 hours of television weekly[4]. A healthy and balanced diet provides the recommended amounts of nutrients and other food components to promote normal growth and development, reduce chronic disease risk, and foster appropriate energy balance and a healthy weight trajectory. But the current eating regimes of children and adolescents differ markedly from recommended patterns and increase their risks of obesity and poor health[5]. Obesity is associated with increased risks of diabetes, cardiovascular disease, cancer, lower life expectancy and poor quality of life scores[6-8].

There is a strong dose-response relationship between the prevalence of overweight children and hours of television viewed[1,2]. Television viewing is associated with greater periods of inactivity and exposure to food advertising and products[9,10]. Television viewing influences the amount of health-related activity undertaken and directly correlates with consumption of low nutrient-density foods, the persuasion of parents to purchase such food, and development of poor eating habits[11,12]. Sugary and low nutrient foods and beverages comprise up to 60% of all food cues in television programmes during prime time television[13]. Exposure to food advertisements produces significant increases in energy intake in all children, with the largest increase in obese children[14]. Children who see a branded product placement are more likely to select the branded product, and age does not appear to be a mediating factor[15]. Embedding brands within entertainment exerts a powerful implicit influence on children's memory and choices, typically without explicit awareness of advertising exposure[15]. We expect that there is a high probability of increased product consumption with product placements within children-specific programming.

Food advertising aimed at children is dominated by high calorie, low nutritional quality foods[9,10]. In studies, 97.8% of food-product advertisements viewed by children aged 2-11 years old were for unhealthy foods[16]. During 91 hours of advertisements on British children's television, food advertisements were the single largest category of products advertised, accounting for 50% of total advertisements[17]. Advertisements provide a convenient opportunity for children to eat; evidence suggests that people snack more while watching television[18,19]. Thus, foods that should be eaten in moderation comprise a large proportion of children's food advertisements. Encouragingly, however, the number of food advertisements children are viewing appears to be decreasing[20].

Irish context

We investigated the frequency and type of food and beverage in children's television programming, and described the context, motivating factors and outcomes of food and beverage placements on public broadcast channels within Ireland (RTE) and the UK (BBC). These are "public-good" channels, which aim to inform, educate and empower audiences[2122]. In our study, unhealthy foods such as sweet snacks and candy accounted for 47.5% of all food-specific placements and sugar-sweetened beverages accounted for 25% of all beverage placements[23]. Consistent with previous research, social or celebratory motivations for food and beverage depictions within children-specific programming were most common. Motivations and outcomes for cues were similar across UK and Irish television programming[23]. Thus, eating (particularly, eating fatty and sugary foods and sugar-sweetened beverages) is portrayed to children in an attractive and appealing light. We further analysed the portrayal, motivating factors and outcomes of food and beverage placements within different genres of children television including cartoon, animated, movies, quiz, and tween programming (unpublished data). Overall, more than 50% of depicted food cues across genres were for unhealthy foods. Fruit and vegetable-related cues were evenly distributed across most genres (about 10%). A high proportion of fast food and convenience foods was seen within tween programming and a high proportion of sweet snacks and sweets/candy-related cues were seen in animated, cartoon and children genre programmes. A very small proportion of unhealthy food types were depicted within quiz programming. These results highlight the high proportion of unhealthy foods depicted, independent of program genre.

To date, most research on children's television advertisements has focused on advertisements during broadcasts within the United States, thus to address this issue we recently studied advertisements within Irish television during children specific programming[24]. 31% of advertisements related to food or beverage products, with 66.3% of food advertisements for foods that should be eaten in moderation. The most frequently recorded food advertisement was for fast food products (27.3%), followed by sweets/candy (21.6%) and dairy products (17.0%). There were no advertisements broadcast for healthier foods such as fruit or vegetables.

Television has the power to either aid in or oppose the fight against the current obesity epidemic in children. In 2012, new regulations issued by the Broadcasting Authority of Ireland, prohibited the endorsement of foods with high fat, sugar and salt content by celebrities, sports stars, programme characters, characters and personalities from cinema releases, and prohibited health or nutrition claims, or inclusion of promotional offers[25]. Notwithstanding, these regulations do not address the positive and frequent portrayal of unhealthy food products during children-specific television broadcasting. We suggest that parents, policy makers and physicians should be aware of the frequent portrayals of unhealthy food and beverages in children's television. The potential impact of unhealthy food and behaviour portrayals on children requires further research. Future, children's television programmes makers should address these concerns by including frequent and positively associated connotations with healthy foods and behaviours. The future of children's programming should include the active inclusion of more frequent and positively associated connotations with healthy foods and behaviours. So, in addition to attempting to restrict the amount of time spent watching television programming it is also important to change the messages being portrayed regarding food and eating habits on the programs being viewed.

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Referral Letters to the Emergency Department: Is the Medication List Accurate?

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Abstract
Medication errors are common when patients transfer across healthcare boundaries. This study was designed to investigate the quality of information on medicines provided by general practitioners (GPs) on emergency department (ED) referral letters. A convenience sample of referral letters to the ED of a teaching hospital was reviewed. The medication list and / or patient's drug allergy status were noted. Medicines reconciliation including patient (or carer) interview was conducted to determine the patient's actual home medication list. This was compared with the GP list and any discrepancies were identified and addressed. A total of 92 referral letters were included in the analysis of which 60 were computer-generated and 32 were hand-written. GPs provided dose and frequency of administration information in 47 (51%) of the letters sampled i.e. 44 (71%) computer-generated versus 3 (10%) hand-written; $p < 0.001$. In addition, the patient was taking their medicines exactly as per the GP list in 20 (22%) of cases. The patient's drug allergy status was documented in 13 (14%) of the letters.

Introduction

A medication error is defined as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is in the control of the health care professional, patient or consumer.[1] Medication errors are common when patients transfer across healthcare boundaries.[2] Cornish et al reported that 53.6% of patients admitted to general internal medicine wards had at least one unintended discrepancy in their medication orders, of which 38.6% had the potential to cause moderate to severe harm.[3] A 2011 medicines reconciliation study in the emergency department (ED) of the hospital in which this study was performed detected 1.57 unintended medication discrepancies per admitted patient.[4] Prescribing errors on admission may occur as a result of a lack of information on patients 'home' medications at the time of admission. Medicines reconciliation is a means of identifying and addressing such errors. Medicines reconciliation is defined as the process of creating the most accurate list possible of all medications a patient is taking – including drug name, dosage, frequency and route – and comparing that list against the physician's admission, transfer, and / or discharge orders, with the goal of providing correct medication to the patient at all transition points within the hospital.[5] The Commission on Patient Safety and Quality Assurance has recommended that Irish Healthcare Organisations prioritise the implementation of formal systems of medicines reconciliation.[6] Sources of information commonly employed by practitioners in establishing the patient's home medication list include patient and / or carer interview, patient's own medicines, the patient's community pharmacy and the general practitioner (GP) referral letter. This study aimed to establish the quality of information on medicines contained in GP referral letters.

CPD available online at www.imj.ie and questions on page 63.

Methods

This study was conducted in the emergency department of a 700 bed urban teaching hospital from 14th May 2013 to 9th August 2013 inclusive. The study population comprised a convenience sample of patients admitted during this period. A data collection form was designed and data collected by the first author, a clinical pharmacist. Patients were included if they had a GP referral letter, were taking at least one regular medicine prior to admission and were in a position to confirm their regular home medication list. Patients admitted directly from nursing homes were excluded. The pharmacist noted the number of medicines identified on the GP referral letter, whether dosing and frequency of administration information was supplied, and if allergies were recorded. The pharmacist then carried out medicines reconciliation utilising sources including patient / carer interview, reviewing the patient's own medicines and contacting the patient's pharmacy when required. Having established a best possible list of the patient's home medications, this was compared with the information on medicines contained in the GP referral letter, with any discrepancies noted and addressed as appropriate. An experienced clinical pharmacist, when conducting medicines reconciliation, will distinguish between a genuine discrepancy and non-compliance. Where it was suspected that a patient was non-compliant with their medication, this was not classed as a discrepancy. The study was approved by the hospital's clinical audit department and therefore, as per hospital policy, did not require ethics committee approval. Fisher Exact tests were used to compare information provided by computer generated and hand written letters. Probability of a Type 1 error was deemed significant at the 5% level ($p < 0.05$) and data analysis was conducted using Stata (Version 10, College Station, Texas).

Results

A total of 105 patients were recruited. Of these, 13 were subsequently excluded from the analysis as patient and / or carer interview was not possible and medicines reconciliation could not be completed. Therefore 92 patients were included in the analysis. Of these 50 (54%) were male. Patients included in the analysis ranged in age from 24 to 92 years with an average age of 68 years. Two-thirds of the sampled letters were computer-generated (N=62) and one-third were hand-written (N = 30). Study results are shown in table 1 (below).

Table 1

		Letter Type		
Information Provided	**Overall %**	**Computer-Generated %**	**Hand-Written %**	**Fisher's Exact Test**
Dose / frequency of administration	51	71	10	$P < 0.001$
Drug list confirmed by medicines reconciliation	22	27	10	$P = 0.065$
Allergy status documented	14	18	7	$P = 0.209$

GPs provided complete dose information (but not complete frequency of administration information) in 64% of letters sampled and both dose and frequency of administration information in 51% of letters sampled. In addition, the patient was taking their medicines exactly as per the GP list in 22% of cases. The patient's drug allergy status was documented in 14% of the letters. Comparisons between computer generated and hand written letters are presented in table 1 where the difference in the provision of dose / frequency information is shown to be significant.

Discussion

Overall the quality of information relating to medicines provided by GPs on referral letters to the research hospital's emergency department correlated with results from the international literature. Some 78% of letters lacked some information on patients' medicines. McFadzean et al, in a Scottish study comparing the accuracy of junior doctor and pharmacist prescribing in a medical admission unit, reported that half of GP referral letters (N = 104) had an inaccurate drug history or no drug history.[7] Carney reviewed GP referral letters to a New South Wales hospital's adult general nephrology / hypertension outpatient clinic and reported that 83% of letters mentioned prescribed medication and of these only 58% were accurate for drugs and dosage.[8] Tulner et al, in a Dutch investigation, reported that 90 of 120 patients (75%) had at least one discrepancy between the medication list on the GP referral letter and the medication list reported by the patient.[9] Frydenberg and Brekke reviewed admission letters for acute admissions to the medical department of a Norwegian hospital and reported that 39% did not include a medication list, although they did not analyse the accuracy of those that did.[10] In a wider study of sources of pre-admission medication information in an Irish context, Fitzsimons et al reported that the medication list on the GP referral letter accurately represented the patients pre-admission medication list in the case of 1 of 42 patients (2%).[11] Patients were taking a minimum of 3 regular medicines in this study compared to 1 in our study and this may account for the lower concordance between the GP medication list and the patient's actual medication intake, particularly as the authors reported a positive correlation between the number of medicines the patient was taking and the number of discrepancies in pre-admission medication lists.

Our study found the quality of information on medicines on computer-generated letters was significantly better than that on hand-written letters. GPs provided dose and frequency of administration information in 71% of computer-generated letters but this figure fell to 10% when the letter was hand-written. Carney also reported that hand-written letters were more likely to contain inaccuracies.[8] These findings suggest that GPs should be encouraged and resourced to adopt electronic prescribing systems in the interests of patient safety. Patients' allergy status was documented in only 14% of referral letters sampled. Evidence suggests that the inclusion of drug allergy status in Irish GP referral letters is low by international standards. Fitzsimons et al, also in an Irish setting, reported that 24% of GP referral letters provided information on patients' drug allergy status.[11] However Carney, in an Australian study, reported that 70% of referral letters sampled documented the presence or absence of drug allergy.[8]

Limitations of this study include the small sample size and non-consecutive nature of the sample. It must also be acknowledged that communication from secondary care to GPs regarding patients' medicines at hospital discharge could be improved. The research hospital moved to address this issue in 2011 with the introduction of a triple copy discharge prescription form which includes a copy for the GP. Grimes et al have shown that hospital discharge is associated with a high rate of medication discrepancies.[12] In a separate study, Grimes et al found that a collaborative pharmaceutical care model in which pharmacists conducted medication reconciliation at discharge reduced medication error at this transition point.[13] However medicines reconciliation at discharge is not currently performed at the study hospital. It should also be noted that GP out-of-hours services may not have access to patients' medical notes, and as such, the issues identified in this study may be particularly acute in patients admitted outside of normal GP surgery hours and at weekends. Patients should be encouraged to bring their medicines and prescription or medication list into hospital at admission and to retain them until the process of medicines reconciliation has been completed. The UK's Care Quality Commission has highlighted the benefits, particularly in emergency admissions, of patients bringing their own drugs into hospital but cautions that ambulance service cooperation is essential.[14] International evidence suggests that pharmacist acquired medication histories are more accurate than physician acquired medication histories.[15] Viewed in conjunction with our findings and those of others, this points to a greater role for pharmacists in medicines reconciliation on

admission via the emergency department and at the time of discharge. In 2011 the Irish College of General Practitioners (ICGP) in collaboration with the Health Information and Quality Authority (HIQA) produced a national referral form for GPs which includes sections on current medication and allergies / adverse medication events.[16] While some GP computer packages have incorporated the data set requirements for the national referral form, more widespread adoption of this form would be helpful. Many of the issues highlighted in this study could be addressed through the introduction of electronic patient records (EPRs). Utilisation of EPRs in British Columbia allows emergency department physicians to view patients community pharmacy medication records online.[3]

The study found considerable variation in the quality of information on medicines provided by GPs on referral letters. Computer-generated letters provided better information on medicines compared to hand-written letters. The study demonstrates that emergency department physicians should not rely on the referral letter alone in establishing the patient's current medications. Patient or carer interview, as well as an examination of the patient's own medicines where available, are important in establishing an accurate picture of the patient's pre-admission medication intake.

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Can You Die From Obstructive Sleep Apnoea Syndrome (OSAS)?

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Abstract
Studies suggest an independent association between Obstructive Sleep Apnoea Syndrome (OSAS) and cardiovascular death. The purpose of our study is to examine doctors' awareness of this association and to determine whether this correlates with recording of OSAS on death certificates. We contacted the Central Statistics Office (CSO) and obtained relevant mention of OSAS on death certificates. We surveyed doctors on their view of OSAS-related deaths. CSO data from 2008-2011 reveal two deaths with OSAS documented as a direct cause and 52 deaths with OSAS as a contributory cause. Seventy-five doctors' surveyed (41%) believe OSAS can be a direct cause of death and 177 (96%) believe OSAS can be an indirect cause of death. Only 22 (12%) had put down OSAS as a cause of death. OSAS is seldom recorded on death certificates. This is at odds with epidemiological forecasts and contrary to an opinion poll from a selection of doctors.

CPD available online at www.imj.ie and questions on page 63.

Introduction

Obstructive Sleep Apnoea Syndrome (OSAS) is a common condition with a prevalence of 2 to 4% in the adult population[1]. It is of major public health concern owing to its diverse consequences which range from cognitive decline, daytime somnolence, cardiovascular disease and metabolic dysregulation[2-4]. It is characterised by recurrent episodes of apnoea during sleep due to collapse of the pharyngeal airway. This results in swinging increases in negative intrathoracic pressure, fragmented sleep and intermittent hypoxia. A large body of evidence shows strong associations between OSAS and cardiovascular diseases, particularly hypertension. Associations are also seen with coronary artery disease, arrhythmias, heart failure and stroke[5,6]. Overactivity of the sympathetic nervous system, systemic inflammation and endothelial dysfunction are thought to be the most important pathophysiological pathways involved[7]. The prevalence of OSAS in patients with hypertension is approximately 40%[8]. A high prevalence is also seen in myocardial infarction (65%), stroke (62%), atrial fibrillation (49%) and heart failure (30-40%)[9-12]. All cause and cardiovascular mortality are increased in patients with OSAS[13,14]. In Ireland over 9000 deaths are attributed to cardiovascular causes each year[15]. One would expect a high percentage of cardiovascular deaths also have OSAS as a contributing factor. We suspect this is not reflected on death certification. The purpose of our study is to examine doctors' awareness of the association between OSAS and cardiovascular death and to determine whether this awareness correlates with recording of OSAS on death certificates.

Methods

We contacted the Central Statistics Office (CSO). Data was obtained with relevant mention of OSAS on national death certification. This included data from 2008 to 2011 inclusive. The data provided us with the different sub-categories of causes of death which are divided into four sections on Irish death certificates - section 1; the disease or condition directly leading to death, sections 1b and 1c; antecedent cause or morbid condition leading to death, and section 2; significant other condition contributing to death but not related to the cause. We sent an email survey to both NCHDs (Non-Consultant Hospital Doctors) and consultant doctors. The NCHDs included 2013 graduates from National University of Ireland, Galway (NUIG) and University College Cork (UCC) and Specialist Registrars (SpR) in Cardiology. The consultant group consisted of Consultant Pathologists, Cardiologists and Respiratory Physicians. The purpose of the email survey was to examine doctors' awareness of the association between OSAS and cardiovascular death. A simple questionnaire was sent comprising of three questions: A: Can OSAS can be a direct cause of death? B: Can OSAS can be an indirect cause of death? C: Have you ever recorded OSAS as a cause of death on a death certificate? As there is no National Database of patients diagnosed with OSAS we used CPAP usage as a surrogate marker. We obtained data from four Irish Continuous Positive Airway Pressure (CPAP) suppliers on the numbers of deaths in patients with a diagnosis of OSAS who have been prescribed CPAP. The suppliers included ResMed Incorporated, Orega Systems Limited, Medicare and Direct Medical. This information reflects a three year period from 2011 to 2013 inclusive.

Results

Central Statistics Office

CSO data (2008-2011 inclusive) recorded 2 deaths directly caused by OSAS (section 1a), 21 deaths indirectly caused by OSAS (sections 1b and 1c) and 56 deaths with OSAS mentioned as important but not as a cause of death (section 2).

Email Survey

185 of 286 doctors responded to an email survey (65% response rate). A significant percentage (41%) believes OSAS can be a direct cause of death whereas most (96%) believe OSAS can cause death indirectly. Of those who had signed death certificates, 12% had documented OSAS as a cause of death. Cardiology SpRs were the least likely group to feel OSAS can cause death.

Table 1 CSO causes of death

Year	Deaths directly caused by OSAS (section 1a)	Deaths indirectly caused by OSAS (section 1b)	Deaths indirectly caused by OSAS (section 1c)	Deaths not caused by OSAS but contributing significantly (section 2)
2008	0	3	1	8
2009	0	2	2	14
2010	1	4	1	16
2011	1	3	5	18
Total	**2**	**12**	**9**	**56**

Table 2 Doctors' response to survey

Physician	Can OSAS be a direct cause of death?	Can OSAS be an indirect cause of death?	Have you ever recorded OSAS as a cause of death on a death certificate?
NCHDs (n=76)	34 (45%)	76 (100%)	0
Respiratory Consultants (n=34)	18 (53%)	33 (97%)	7 (21%)
Consultant Pathologists (n=14)	4 (29%)	14 (100%)	0
Consultant Cardiologists (n=36)	12 (33%) *+ 3 (8%) unsure*	30 (83%) *+ 2 (6%) possibly*	6 (17%)
SpR, Cardiology (n=25)	7 (28%)	24 (96%)	9 (36%)
Total (n=185)	**75 (41%)**	**177 (96%)**	**22 (12%)**

CPAP Suppliers

Information could only be obtained from four of eight Irish CPAP suppliers. This provided us with a probable underestimate of the numbers of deaths per annum in patients requiring CPAP treatment (Table 3). Over a three year period, there were 94 deaths recorded.

Table 3 Doctors' response rate to survey

Physician	Surveyed	Responded
NCHDs	98	76 (77%)
Respiratory Consultants	43	34 (79%)
Consultant Pathologists	28	14 (50%)
Consultant Cardiologists	75	36 (48%)
SpR, Cardiology	42	25 (60%)
Total (n=185)	**286 (41%)**	**185 (65%)**

Table 4: Irish CPAP suppliers' data

Year	ResMed Inc.	Orega Systems Ltd.	Medicare (estimated)	Direct Medical
2011	14	4	2	9
2012	29	8	2	3
2013	14	7	2	0
Total	**57**	**19**	**6**	**12**

Discussion

Over the four year period, OSAS was mentioned infrequently on Irish death certification and predominantly as a significant co-morbid condition rather than as a direct cause of death. This doesn't appear to be due to lack of awareness of the association between OSAS and cardiovascular disease amongst doctors most used to treating patients with OSAS. CSO data from 2011 reported that 27 death certificates had mentioned OSAS. Data obtained from only four of at least eight suppliers of CPAP, suggested 29 people with OSAS died in 2011 probably a significant underestimation. Furthermore, it could be argued that those on CPAP are less likely to die because their OSAS is treated compared to those who reject CPAP therapy. This lends weight to the argument that OSAS is grossly under-recorded on Irish death certification. International registries rarely have OSAS documented as a cause of death also. In Denmark for example, OSAS was documented just 6 times in the same four year period (2008 – 2011)[16].

There are several possible explanations for this discrepancy. One argument is that OSAS is forgotten as a relevant or important

condition when documenting cardiovascular death. This could be the reason for the low percentage of those surveyed who have mentioned OSAS on a death certificate. On the other hand, death certificates of patients with known OSAS may not be completed by our surveyed group but by doctors unaware of the pre-death diagnosis or the known link between OSAS and cardiovascular disease. Alternatively, it could be that OSAS indeed contributes to cardiovascular death, but the condition remains undiagnosed and perhaps not even suspected in the majority, and therefore cannot be documented. Least likely of all is that patients with OSAS do not die. The major question is whether OSAS is indeed capable of producing mortality. Some argue that patients who present with OSAS often have pre-existing risk factors for cardiovascular death and that OSAS is an associated phenomenon. On the other hand, there is a very reasonable hypothesis for why one might die from OSAS directly or indirectly. Anecdotally, apnoeic episodes can last over a minute in severe cases, leading to a drop in oxygen saturation to the low sixty percent range. This could easily lead to cardiac ischaemia. To overcome obstructive apnoea, the sufferer has to produce huge negative intra-thoracic pressures in order to "suck" the airways open again. This extreme negative airway pressure transmits to the heart impairing ventricular function and reducing stroke volume. The "apnoea" generally terminates in an arousal from sleep. Each arousal is accompanied by a significant jump in blood pressure, a tachycardia, and a surge in excreted catecholamines. The body therefore takes several hits to the cardiovascular system each capable of adversely affecting survival.

Sympathetic nervous system over activity has been well documented in OSAS and has been found to cause systemic arterial hypertension, a major risk factor for cardiovascular death[17]. There is some evidence to suggest a causal relationship between OSAS and the development of atherosclerosis[18]. Intermittent hypoxia has been shown to trigger activation of the transcription factor Nuclear Factor Kappa B (NF-kB) which is a master regulator of the inflammatory response with many pro-atherogenic inflammatory genes under its control. Clinical studies however have yet to show that coronary artery disease can be directly caused by OSAS. An interesting study by Kent et al demonstrated higher coronary plaque volume in OSAS patients with higher Apnoa-Hypnoea Indexes (AHI) suggesting that OSAS severity is a major predictor of atherosclerotic burden[19]. Cardiac arrhythmias are common in patients with sleep-disordered breathing, their significance being highly dependent on the presence of underlying heart disease. Sleep is usually accompanied by a reduction in Premature Ventricular Contractions (PVC) indicating that a high number of nocturnal PVC's may be a marker of sleep-disorders/OSAS. In heart failure patients, OSAS and central sleep apnoea (CSA) independently increase the risk of malignant ventricular arrhythmias[20]. A recent study by Gami et al looked at the risk of sudden cardiac death (SCD) in OSAS patients. They found that nocturnal hypoxemia, an important pathophysiological feature of OSAS, strongly predicted SCD independent of well established risk factors[21]. OSAS is also strongly linked with obesity, type 2 diabetes mellitus, dyslipidaemia and heart failure although a causal relationship is yet to be clearly demonstrated[19].

In Korea, Lee et Al[22] looked at the mortality of over 2200 patients with OSAS. They found a four-fold increase in cardiovascular mortality after adjusting for known cardiovascular risk factors including hypertension, stroke, diabetes mellitus and cardiovascular disease. In an Irish study looking at the protective effect of CPAP therapy on cardiovascular outcomes in patients with severe OSAS, four of the nine patients who died and had never used CPAP therapy did so unexpectedly with no documented cardiovascular disease[23]. Several other papers conclude that OSAS is an independent risk factor for cardiovascular death with a hazard ratio ranging from 1.6 to 6.24[8,24,25]. Other studies conclude that cardiovascular mortality is not increased in patients with OSAS. Young et al[13] followed over 1500 patients with sleep disordered breathing and found that OSAS had no significant effect on cardiovascular mortality after adjusting for other cardiovascular risk factors.

OSAS is very easily treated with continuous positive airway pressure (CPAP) therapy with strong suggestions from the literature that CPAP has a cardio-protective effect. By documenting OSAS on death certificates when appropriate, it raises awareness of the condition and its profile as a public health problem. Current death certification in Ireland rarely reflects the proven association between OSAS and cardiovascular disease and death despite an apparent awareness of this association among doctors.

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Sickle Cell Disease: Time for a Targeted Neonatal Screening Programme

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Abstract
Ireland has seen a steady increase in paediatric sickle cell disease (SCD). In 2005, only 25% of children with SCD were referred to the haemoglobinopathy service in their first year. A non-funded screening programme was implemented. This review aimed to assess the impact screening has had. All children referred to the haemoglobinopathy service born in Ireland after 2005 were identified. Data was collected from the medical chart and laboratory system. Information was analysed using Microsoft Excel. 77 children with SCD were identified. The median age at antibiotic commencement in the screened group was 56 days compared with 447 days in the unscreened group, p=<0.0003. 22 (28%) of infants were born in centre's that do not screen and 17 (81%) were over 6 months old at referral, compared with 14 (21%) in the screened group. 6 (27%) of those in the unscreened group presented in acute crisis compared with 2 (3%) in the screened population. The point prevalence of SCD in Ireland is 0.2% in children under 15yr of African and Asian descent. We identified delays in referral and treatment, which reflect the lack of government funded support and policy. We suggest all maternity units commence screening for newborns at risk of SCD. It is a cost effective intervention with a number needed to screen of just 4 to prevent a potentially fatal crisis.

Introduction

Sickle cell disease (SCD) is the commonest haemoglobinopathy in man. It is an autosomal recessive condition that leads to abnormally structured and functioning red cells that have a shortened life span, a poor capacity to carry oxygen and a tendency to occlude microvascular spaces. Significant morbidity and mortality results from organ sequestration, occlusion and sepsis. The presence of high Hb F reduces the risk of clinical sickling during the first three months of life but as the Hb F concentration decreases, sickling begins to occur. SCD has recently been labelled a global public health problem by the WHO[1], with recent epidemiological evidence pointing to a worldwide neonatal incidence of 294,000-330,000[2]. SCD was once isolated to Sub-Saharan Africa, India and parts of the Mediterranean and Middle East, however population migration, particularly in the past 10 – 15 years, has vastly changed the distribution and range of this disease and currently only fifty per cent of cases originate within the original countries involved[2].

Ireland has seen a steady increase in the incidence and prevalence of SCD over the past 10 years, mainly due to immigration. An epidemiological study[3] carried out in 2005 identified 160 children with SCD. Unfortunately, only twenty five per cent of these children were being referred to the haemoglobinopathy service (Hb service) in the first year of life. Newborn screening for SCD has been in place in many western countries for the last two decades. Such screening programmes have not only been associated with a reduction in infant mortality from eight per cent to less than one per cent[4], but also a reduction in the morbidity and mortality risk in the under 5yr age range. This is due to the early commencement of prophylactic antibiotics and appropriate vaccination.[5] Following on from the 2005 study, a non-funded haemoglobinopathy screening programme was implemented with the assistance of the three Dublin tertiary maternity hospitals, along with Our Lady of Lourdes Hospital Drogheda, the Mid-Western Regional Maternity Hospital, Limerick and St Luke's Hospital, Kilkenny. Essentially, haemoglobin variants are screened from cord blood taken from all at-risk infants on the first day of life using High Performance Liquid Chromatography or haemoglobin Iso Electric Focusing.[7] All samples are confirmed in the haematology laboratories of either St James Hospital Dublin or Our Lady's Children's Hospital Crumlin (OLCHC). Once a positive sample is identified the laboratory contacts the Hb service at OLCHC and an outpatient appointment is made with a view to early prophylaxis and education.

The aim of this review was to identify all children with sickle cell disease born within the Republic of Ireland between 2009 and

2012 and compare them to the cohort born before screening commenced. We hoped to see a significant change in identification and management of infants with SCD and also wanted to identify areas for future improvement. Ultimately we hoped to provide a strong case for the instigation of a national targeted haemoglobinopathy screening programme.

Methods

All children referred to the haemoglobinopathy service between January 2009 and December 2012 were identified using the database held by the haemoglobinopathy service in OLCHC. From this list, all children born in Ireland after 2005 (when screening began) were identified. This list was then cross referenced with laboratory data provided by St James hospital and OLCHC to ensure there were no missed cases. All cases of paediatric sickle cell disease are confirmed in one of these two laboratories. Clinical, demographic and relevant laboratory data was then collected from the medical chart, a separately held haemoglobin nurse specialist chart, and the hospital information system. This information was then collated and analysed using Microsoft Excel 2008. For information with a normal distribution the two tailed student's t-test was used. A p value of <0.05 is considered statistically significant.

Results

Baseline demographics

A total of 109 children were referred to the Hb service from January 2009 to December 2012. 78 of these were born in Ireland and could have been identified by a screening programme. A total of 396 children were attending our service in 2011. According the national census of 2011[8], there were 19,423 children under the age of fifteen years ethnically at risk of SCD. This gives a paediatric point-prevalence in 2011 of 2%, or 200 per 100,000 at-risk children. Seventy-seven children with SCD were born in Ireland after 2005, following the initiation of screening. A demographic comparison of children referred from centres which screen and those which do not is shown in Table 1. The majority of children were of Sub-Saharan African origin; the rest were from the Indian subcontinent. Over eighty per cent of all children were diagnosed with homozygous SCD. One child of Indian origin was Hb SS while the other, along with a child of Pakistani lineage, were Hb S-D Punjab, the most common haemoglobin variant in the Indian subcontinent.

Referral Information

As Table 1 also demonstrates, the median age at referral to our service was 10 days in the screened group versus 456 days in the unscreened group (p = <0.0001). A number of children born in hospitals without a formal screening programme were screened at birth. This explains the range of 56-1569 days in that group. Some children born in screening hospitals experienced a delay in referral. There was no statistically significant difference between the two groups as regards time from referral to the first appointment, with the median time to attendance of <30 days in both groups. Three per cent of children in the screened group presented with a sickle cell crisis compared with twenty seven per cent of unscreened children, p= 0.037. The median age at antibiotic commencement in the screened group was 56 days compared with 447 days in the unscreened group, p=<0.0003.

Area of birth

Table 2 highlights the geographical pattern of screening. Seventy five percent of children referred over the four-year period were born in areas in which screening occurs. Sixty five per cent of these infants were referred before three months. Fourteen per cent had a delayed referral between three and six months, with a further twenty one per cent presenting between six and twelve months. The remaining twenty five per cent of infants were born in centres that do not screen. All of these infants had a delayed referral, nineteen per cent between three and six months and eighty one per cent older than six months at referral.

Table 1 Baseline Demographics and Referral Information

Category	Sub Category	Screened Population n=55 (%)	Unscreened Population n = 22 (%)	P value
Sex	Male	28 (50)	10 (45)	0.29
	Female	28 (50)	12 (55)	
Nationality	Nigeria	44 (80)	17 (85)	
	Other African Nation	9 (17)	2 (10)	
	India	2 (3)	0 (0)	
	Pakistan	0 (0)	1 (5)	
Diagnosis	Hb SS	45 (80)	19 (86)	
	Hb SC	8 (14)	2 (9)	
	Hb S-D punjab	1 (2)	1 (5)	
	Hb S-ß thal	2 (4)	0 (0)	
Median age at referral (days)		10 (2 – 1827)	456 (56 – 1659)	<0.0001*
Median number of days from referral to 1st appointment date		13 (3 – 25)	13 (2 – 23)	0.49
Median number of days from referral to 1st attended appointment		19 (3 – 218)	30 (2 – 116)	0.275
Median age at Antibiotic Commencement (days)		58 (9 – 1827)	447 (84 – 1650)	<0.0003*
Referred < 3/12		43 (65)	0 (0)	
Referred 3-6/12		9 (14)	4 (19)	
Referred >6/12		14 (21)	17 (81)	
Crisis at diagnosis		2 (3)	6 (27)	0.037*

N=Number of patients, * p <0.05

Table 2 Number of births and screening outcome based on area of birth

Area of Birth	N=77	Screened (%)	Referral <3/12 (%)	Referral 3-3-6/12 (%)	Referral >6/12 (%)
Dublin	46	46 (100)	38 (82)	1 (2)	7 (15)
North East	9	9 (100)	8 (88)	0 (0)	1 (12)
Midlands	8	0 (0)	0 (0)	0 (0)	8 (100)
West	7	0 (0)	0 (0)	0 (0)	7 (100)
South West	2	2 (100)	1 (50)	0 (0)	1 (50)
South	5	0 (0)	4 (80)	0 (0)	1 (20)

N=Number of patients

Discussion

Our study sought to highlight that neonatal screening for SCD in a targeted population within Ireland is a feasible and necessary step for the prevention of significant morbidity and mortality in this population. Both universal and targeted programmes are in use throughout Europe, the USA and many African countries. Screening is cost effective and is an acceptable test for most families.[9,10] Whilst the prevalence of SCD in the Irish population is very small, the prevalence of 200/100,000 children under the age of fifteen of African and Asian origin is 50 times higher than the current prevalence (4/100,000) of Cystic Fibrosis in children under the age of fifteen of Irish origin[11], a disease screened for in the national newborn screening programme. Screening leads to early referral to a specialist Hb service. We have shown that the single biggest impedance to treatment commencement is the time taken to initial diagnosis and referral. In hospitals that screen at birth, sixty five per cent of children are referred by three months of age, compared with none of the unscreened children. Early presentation greatly reduces the risk of morbidity and mortality from sepsis[14], which is highest between the second 6 months of life and 5 years.[15,16] Early penicillin prophylaxis is recommended to commence between 2 and 3 months of life.[12,13] In our study the median age for commencement of antibiotic prophylaxis in the screened group was 56 days compared with over 13 months in unscreened children. The rate of presentation with acute sickle crises in our study was twenty seven per cent in the unscreened group compared with just three per cent in the screened population. Based on this data, the number of children needed to screen to prevent one child from presenting with a sickle crisis is 4.

The suggested gold standard of care is that ninety five per cent of children should be referred by the age of 3 months.[17] Our figure of sixty five per cent (in the screened group) reflects the fact that there is no funded support for this programme, nor a national coordinator or a government supported policy. One of the reasons for delayed referral from hospitals that screen occurred where

there was an intermediary step in the processing of samples. The fastest results came from hospitals that utilise the laboratory service based in OLCHC or St James hospital Dublin. Repeat sampling was not required and appointments for the outpatient clinic were made directly by the Hb service in OLCHC following direct and timely communication of a positive result from the laboratory. In general, there are inadequate supports and resources in place to ensure that each child's results are seen, correctly interpreted and acted swiftly upon. One of the biggest challenges is contacting parents and ensuring their clinic attendance. As can be seen in Table 1, there was at times a long delay between referral and the first clinic attendance. Once again, the lack of a funded coordinator for the service makes this a difficult task and many of the children had received upwards of four appointments before presentation at clinic. The lack of a national programme and associated antenatal and postnatal education around SCD screening as well as early phone contact, means that parents often do not understand the importance of attending and fail to do so until repeatedly requested. According to the 2011 National Census, there are 77,292, 7,395, 8,044 and 3,166 people of either African or Asian nationality living in Leinster, Munster, Connaught and Ulster (part of) respectively. Table 2 clearly identifies children from all four provinces presenting with sickle cell disease. With a paediatric prevalence of SCD as high as 0.2 per cent in this population, it is difficult to ignore the need for a targeted neonatal national screening programme.

While awaiting the implementation of a neonatal screening programme, we would strongly suggest that at a minimum, all hospitals with maternity units in this state commence screening for newborns at risk of SCD. It is a cheap, cost effective intervention with a number-needed-to-screen of just 4 to prevent one child from a potentially fatal crisis. We also recommend improving local and national awareness regarding the importance of screening, the interpretation of results and encourage medical and nursing staff to always be alert to the possibility of undiagnosed SCD in an unwell child.

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Hospital to Home Paediatric Enteral Nutrition – Parents Need Support

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Abstract
This study assessed the provision of education and support to parents of children on home enteral nutrition (HEN), current dietetic support available and perceived challenges facing parents and carers. From the 39 responses (13%), 29 (83%,n=35) parents suggested services for HEN need improvement. 29 (74%, n=39) parents wanted more structured follow up and 22 (56%) would like one person to co-ordinate HEN, education and discharge.7 parents (18%) reported a need for further education of health care professionals (HCP). Hospital dietitians were the most common HCPs reported to provide support to patients following discharge. Specialist paediatric HEN dietetic services working in a dedicated HEN team, who would provide accurate training and education and liaise with both parents and community care services post discharge should be in place. This would facilitate transfer to community care, reduce hospital re-admissions, outpatient department attendances and costs.

Introduction

Prevalence of HEN is increasing as greater efforts are made to prevent the adverse nutritional consequences of chronic disease[1]. 288 children were discharged on home enteral nutrition (HEN) from Children's University Hospital (CUH) Temple St, Dublin from January 2005 – 2010[2]. While HEN provides cost savings for hospitals, it places greater demands on carers in the community, particularly family members[3]. It is recommended that children receiving HEN obtain regular review by a multidisciplinary team[4]. Previous research in this area has focused on clinical issues, health outcomes, risk and complication management of long term HEN[5]. Little literature is available on the perceptions of parents and carers of children on HEN. Challenges reported include psychosocial issues, stress and quality of life (QOL) levels and carer's opinion of support and education provided[6-9]. Irish research on adult HEN reported a need for more support and improved co-ordination between hospital and community services to monitor patients' nutritional status[10,11]. With this in mind it has become increasingly important to understand the perceptions of those directly involved in the provision of care for children receiving HEN[12]. This study aims to assess the provision of education and multidisciplinary support to parents of children on HEN, the dietetic support provided and to understand the challenges facing parents and carers, highlighting improvements that may be required.

Methods

A mixed method cross-sectional study design was used. A questionnaire was developed using available literature and input from clinical dietitians. Data were collected by one researcher (MA). 301 parents (or persons with parental responsibility) of patients who had long term enteral tubes (LTET) (i.e. gastrostomy/ jejunostomy/ transgastric jejunostomy/ percutaneous endoscopic gastrostomy with jejunal extension) placed during the time period 1/1/2008 to 30/06/2013 were identified as eligible to participate in the study. Parents were sent the questionnaire and invited to contact the research dietitian if willing to take part in an interview based on the same questionnaire. Verbal consent was obtained. Interviews were completed over telephone or face-to-face during a routine visit to the hospital. Sixteen participants returned written questionnaires and were not interviewed as they did not consent to it and/or due to time restraints. Interviews were recorded, transcribed verbatim and analysed (including written questionnaires) using thematic analysis aided by NVivo 10 Data analysis software[13]. Quantitative data was described using Microsoft Excel 2010. Themes were reviewed by all researchers involved in the project to ensure agreement. The Scientific Committee of the Children's University Hospital, Temple Street granted ethical approval for the study.

Results

39 of 301 (13%) responses were analysed; 16 written questionnaires and 23 interviews based on the same questionnaire. HEN patients had a range of medical conditions including neurological conditions (12), Renal disease (6), Cystic Fibrosis (5), metabolic conditions (4) and other diagnoses (12). All parents reported that LTET feeding did or is benefitting their child. 23% of parents reported that it is not without extra work or difficulties but benefits to child and family outweigh these problems. 80% of parents would tell other parents how beneficial a LTET has been for their child. 20% would advise other parents to make an "informed decision", "be very sure it's what you want"," be clear on what's involved" and "know how long it's for", and "consider exit plan". 83% of parents suggested services for HEN need improvement. 15% had no suggestions or were happy with all services provided. The main themes identified were a need for education for parents and HCPs, structured support and follow up plan and co-ordination across all health care services.

Table 1 Healthcare professional support reported post discharge.

Health care professional	Number of parents receiving support (n=28)
Dietitian in the hospital	25
Nurse in the hospital	23
Public Health Nurse	14
Medical Nutrition Company Representative	9
Other	6
Surgeon in the hospital	4
Dietitian in community based centre e.g. CRC/St.Michael's House	4
GP	1

Note: some parents mentioned multiple HCPs

Table 2 Who do you call now if you have a problem with your child's enteral feeding?

Health care professional	Number of parents	%
Hospital dietitian	14	36
Nurse – hospital, ward or out patients	8	20
Clinical Nurse Specialist	6	15.4
Doctor/Consultant/ Paediatrician	4	10
Dietitian in community based centre e.g. CRC/St. Michael's House	4	10
PEG/Stoma nurse in hospital	4	10
CUH Department – neurology, metabolic	3	7.6

Note: some parents mentioned multiple HCPs

Education

97% of parents received information at time of LTET placement. 89% felt that all of their questions were answered at this time. 18% of parents suggested that HCPs in both community and hospitals may benefit from education on stoma care and types of LTET, particularly in relation to post discharge care. "I think the hospital kinda presumed that in the public domain, public health nurses and GP practices all know this information, and they don't. They don't have it and they don't have experience of it"

Follow up services

74% reported a need for more structure and support at different stages of the HEN process. Parents that did not need more support were under regular review by a specialist hospital dietitian

and nurse i.e. Cystic Fibrosis and metabolic patients. Hospital dietitians and nurses were the most common HCPs reported to provide support to patients in the community after initial discharge (Table 1). Only 26% of patients have access to a dietitian in a community based service, 36% of children have no access to a local or regional community based service. 54% of parents requested support for feeding issues. 85% of parents spoke to a dietitian > 3 times in the year post discharge home. When asked "who do you call if you have a problem with your child's enteral feeding?" hospital dietitians and hospital nurses were reported most often (Table 2).

Hospital based dietetic reviews were the most common form of dietetic follow up received (90%). Many parents were happy to continue with hospital based dietetic review while others would prefer a community based review. 36% of parents reported difficulty travelling to a hospital appointment. 56% of parents suggested that one person should be available to provide accurate training and information on organising supplies prior to discharge as well as liaising with the community team (if appropriate) and parents post discharge. 54% of parents surveyed knew of other parents with children on HEN. Of parents interviewed by phone (n=22) 82% thought that contact with other parents of children on HEN would be very beneficial to them. 55% thought that a support or buddy network should be offered or facilitated by the hospital, stating: "She's been there, done that. She knew what I was going through".

Discussion

This study provides an insight to experiences and opinions of a small group of parents or carers of LTET fed children in a tertiary paediatric hospital in Dublin. It must be acknowledged that these are retrospective views of those who chose to respond and should be interpreted accordingly. Difficulty recalling past events may contribute to bias. Non response is a common problem in wide-scale surveys; techniques to minimise nonresponse were not used as there were a satisfactory number of responses[14,15]. Bias response may affect results; parents with strong opinions on this subject may have been more likely to respond[15]. The combination of written questionnaires (16) and more detailed verbal interviews (23) collected may have also skewed results. As found by Brotherton et al., a high percentage of participants reported that LTET feeding did or is benefitting their child, citing a quick improvement in child's condition, improved QOL for parents and child and reduced feeding related stress since initiation[13]. "Much easier than before on both self and son".

Feradays' report that LTET feeding is perceived as a "mixed blessing" by some parents was also supported in the current study as 23% of parents reported that HEN is not without extra work and difficulties but the benefits outweigh these problems[16]. As found previously, suggestions for improvement in education of parents and HCPs, structured support and follow up plan in addition to co-ordination across all services were raised by this study group[6-9]. Rollins found a lack of appropriate information was reported and parents expressed a need for consistent, accurate information regarding the surgery and aftercare, appearance and location of tube, benefits of tube feeding and the possibility of continuing oral feeding[17]. It has been suggested that HCPs should discuss the quantity and type of information needed based on individual parent's needs[12]. Little information was received on daily life caring for children on HEN or the possible long term outcomes of HEN by parents in the current study. However, 89% of parents felt all their questions were answered at LTET placement suggesting that while parents are often happy with information received at the time, when discharged home they have further questions and may benefit from on-going HCP support. The role of families trained as peer advocates is an untapped resource in HEN, which was also suggested by this group[18]: "I think that you can learn an awful lot from speaking to other parents that are going through a similar situation". In a study by Evans most patients contacted either a community nurse (40%) or dietitian (40%) for assistance with HEN issues[19]. In this study, 89% of parents received support from the hospital dietitian and 82% from a hospital nurse post discharge. The DOHC primary care strategy (2001), states that it will enable primary care to lessen the current reliance on specialist services and the hospital system[20]. Research in CUH, found that of 170 patients discharged on HEN, 78 were followed up by hospital based dietitians in CUH[2]. Given that just 36% of the children in this study are followed up by a non-hospital based dietitian, and a high proportion of queries and reviews are dealt with by hospital dietitians it is clear that the DOHC strategy is not being achieved. While some cases require the input of a highly specialist dietitian, many others would be better served in the community by a HEN paediatric dietitian.

Scottish guidelines highlight the importance of communication and sharing of information between local and regional services for children on HEN to ensure best practice is achieved[4]. The DOHC Primary Care strategy states that discharge planning will be improved, with the development of individual care plans[1]. Nevertheless, more effective co-ordination across all services and improved communication between HCPs was called for by parents. Public health nurses and GPs were not always perceived to be up to date with what has happened in the hospital. "I should be able to go to my GP and my GP really should know everything that's going on with x, because records should get transferred from hospital to GP. My GP doesn't." "Better structure on the percutaneous endoscopic gastrostomy (PEG) procedure should be in place. Support structure should be outlined and there should be coordination across all services caring for my child in Temple Street (CUH)." Rice and Normand suggest that healthcare cost saving requires a cross-sectoral approach[21]. Adult HEN research found that both patients and carers had a wide range of concerns relating to their care in the community[11,22]. Given that 36% of parents report issues with travelling to hospital appointments and 56% would like one HCP to liaise with, it is clear that there is a need to develop community based paediatric dietetic services. The DOHC "Statement of Strategy 2011-2014" (2012) re-iterates the 2001 policy to strengthen primary care services, however there is little evidence of improved access to primary care dietetic services 13 years later[23].

In conclusion, HEN via LTET was deemed successful by all parents. However, the current primary care strategy is failing due to a lack of resources, particularly community dietetic posts. A specialist paediatric dietitian working in a dedicated HEN team, who would provide accurate training and education and liaise with both parents and community care services post discharge should be in place to comply with best practice guidelines and current government policy[4,20,23]. This would support transfer of patients to community care and reduce hospital admissions, outpatient department attendances and costs.

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Expanding Access to Rheumatology Care: The Rheumatology General Practice Toolbox

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Abstract
Management guidelines for many rheumatic diseases are published in specialty rheumatology literature but rarely in general medical journals. Musculoskeletal disorders comprise 14% of all consultations in primary care. Formal post-graduate training in rheumatology is limited or absent for many primary care practitioners. Primary care practitioners can be trained to effectively treat complex diseases and have expressed a preference for interactive educational courses. The Rheumatology General Practice (GP) Toolbox is an intensive one day course designed to offer up to date information to primary care practitioners on the latest diagnostic and treatment guidelines for seven common rheumatic diseases. The course structure involves a short lecture on each topic and workshops on arthrocentesis, joint injection and DXA interpretation. Participants evaluated their knowledge and educational experience before, during and after the course. Thirty-two primary care practitioners attended, who had a median of 13 (IQR 6.5, 20) years experience in their specialty. The median number of educational symposia attended in the previous 5 years was 10 (IQR 5, 22.5), with a median of 0 (IQR 0, 1) in rheumatology. All respondents agreed that the course format was appropriate. Numerical improvements were demonstrated in participant's confidence in diagnosing and managing all seven common rheumatologic conditions, with statistically significant improvements ($p<0.05$) in 11 of the 14 aspects assessed. The Rheumatology Toolbox is an effective educational method for disseminating current knowledge in rheumatology to primary care physicians and improved participant's self-assessed competence in diagnosis and management of common rheumatic diseases.

Introduction

There is a disconnect between the flow of knowledge and burden of care in the management of rheumatic diseases. Musculoskeletal disorders comprise 14% of all consultations in primary care.[1] Despite this, formal post-graduate training in rheumatology is limited or absent for many primary care practitioners and management guidelines for many rheumatic diseases are published in the specialty rheumatology literature but rarely in general medical journals.[2] This may partly be explained by an inherent attitude that many rheumatic diseases are not important or exciting, at least in so far as they are rarely acutely life-threatening.[3] However these diseases are clearly important to patients given that they frequently seek medical attention for them.[1] The demand for rheumatology care exceeds supply in many countries, a problem expected to increase in the coming decades.[4] It is inconceivable that the current level of rheumatologist staffing will be able to provide comprehensive care for this volume of patients and even increased staffing levels will only ensure that complex and specialised cases have ready access to a rheumatologist. There will therefore be an ongoing and increasing proportion of patients with musculoskeletal complaints who are cared for within the community rather than at secondary and tertiary referral centres. It behoves rheumatologists to share their knowledge and empower dedicated primary care practitioners in the management of common rheumatic diseases. There is a widespread lack of knowledge of management

guidelines for rheumatic diseases, or even the existence of these among primary care physicians.[5] Despite this the majority of physicians are eager to learn and agree that the use of clinical guidelines or management algorithms would improve their practice.[5,6]

Primary care practitioners can be trained to effectively treat complex diseases as exemplified by the case of hepatitis C.[7] A variety of educational formats are available to physicians, primary care physicians have expressed a preference for interactive educational courses both in general and in rheumatology.[2,8] There are advantages to the community provision of care for chronic conditions in terms of patient convenience, frequency of visits, the development of trust over time and the ability to provide more holistic care by physicians familiar with patient's personal, cultural and societal circumstances. This is particularly important for conditions, such as many forms of arthritis, which can have profound life-long impacts in terms of social function and interaction. The aim of this study was to evaluate the Rheumatology GP Toolbox, a novel educational method for disseminating current knowledge on rheumatology disorders to primary care practitioners.

Methods

The Rheumatology GP Toolbox was designed based on our own personal interactions with General Practitioners (GPs) over a number of years in a variety of educational and clinical settings. In addition one of the authors had worked in primary care for several years, prior to becoming a consultant rheumatologist and had experience of attending and running symposiums for primary care. The findings of the 3E survey of Irish GPs demonstrating limited access to rheumatology teaching were also considered. The format is of an intensive one day course designed to offer up to date information to primary care practitioners on the latest diagnostic and treatment guidelines for a selection of common rheumatic diseases comprising inflammatory arthritis, gout, back pain and ankylosing spondylitis, osteoporosis, fibromyalgia and osteoarthritis. The course structure involves six lectures of thirty minutes each on these topics followed by an interactive discussion. The course is completed by three practical workshops of thirty minutes duration on arthrocentesis and joint injection of the knee and shoulder, and interpretation of dual-energy X-ray absorptiometry (DXA) scans.

Traditionally courses have focused on either lectures or workshops and rarely blended both into a cohesive structure. The "Toolbox" theme was unique with the focus on equipping GPs with "tools" or skills for assessing and managing common diagnoses seen in general practice. The focus was on equipping GPs with these tools rather than an expert opinion type lecture. All course participants were provided with a "Toolbox" on attendance. This consisted of a specially designed container, the "Toolbox" of the title, containing copies of the delivered lectures detailing up to date diagnostic and management guidelines on each of the topics covered by the course. These were termed the "tools" that general practitioners required to increase their proficiencies in the topics and were provided in two forms; a traditional paper booklet was complemented by a USB stick. Participants evaluated their confidence in diagnosing and managing the conditions covered before and after the course rating aspects on a 5-point Likert scale. In addition qualitative responses were sought in the form of an option to add free-text comments and opinions. The pre-course assessment was completed between two and four weeks prior to the course and the post-course assessment was completed between two and four weeks after the course. During the course participants were asked to evaluate the course in terms of clarity, relevance, improvement in knowledge, effect on the structure of their assessments, anticipated effect on referral patterns, novelty of information, anticipated change in practice, improvement in pre-referral assessment and empowerment of management. The collection and evaluation of responses was carried out in a combination of electronic and paper form to ensure response rates were as high as possible. The evaluations were conducted using SurveyMonkey software (SurveyMonkey Inc., Palo Alto, California, USA, www.surveymonkey.com).

Statistical analysis was carried out using Microsoft® Excel (Microsoft, Redmond, WA) and GraphPad InStat version 3.10 (GraphPad Software, San Diego, California, USA). Descriptive statistics were used, including as appropriate, means / standard deviations(SD), medians / inter-quartile ranges (IQR) or numbers / percentages, with P values for between-group differences calculated using t-test for continuous variables and Fisher's exact test for categorical variables. Statistical significance was set at $P<0.05$ throughout. The study was approved and conducted in accordance with the audit guidelines of Galway University Hospitals.

Results

Thirty-two primary care practitioners attended. All participants were fully-qualified primary care practitioners (general practitioners, family practitioners). The attending physicians had a median of 13 (IQR 6.5, 20) years experience in their specialty. The median number of educational symposia they had attended in the previous 5 years was 10 (IQR 5, 22.5), with a median of 0 (IQR 0, 1) in rheumatology. Twenty-five (78%) of the thirty-two participants completed both the pre and post course assessments. Respondents stated the toolbox improved their knowledge of, and confidence in diagnosing and managing common rheumatologic conditions, and would improve the quality of their care and referrals. Table 1 demonstrates participant's self-

Table 1 Comparison of the pre and post course confidence of participants for diagnosing and managing common rheumatic disorders. Data shown for percentage of participants ranking confidence as 4 or 5 on 5-point Likert scale.

	Diagnosis				Management		
Condition	Pre-course	Post-course	P-value	Condition	Pre-course	Post-course	P-value
Osteoarthritis	80%	96%	0.190	Osteoarthritis	60%	96%	0.005
Fibromyalgia	20%	56%	0.019	Fibromyalgia	16%	52%	0.016
Gout	72%	96%	0.049	Gout	68%	100%	0.004
Inflammatory Arthritis	52%	88%	0.012	Inflammatory Arthritis	16%	76%	<0.001
Osteoporosis	80%	96%	0.190	Osteoporosis	68%	88%	0.171
Back Pain	64%	92%	0.037	Back Pain	56%	88%	0.026
Ankylosing Spondylitis	12%	88%	<0.001	Ankylosing Spondylitis	8%	68%	<0.001

Table 2 Participants evaluations of course. Data shown for percentage of participants agreeing or strongly agreeing on 5-point Likert scale.

	Osteoarthritis	Fibromyalgia	Gout	Inflammatory Arthritis	Osteoporosis	Back Pain	Ankylosing Spondylitis
Relevance	96%	100%	100%	100%	96%	96%	96%
Clarity	93%	96%	100%	93%	79%	89%	93%
Improved Structure	79%	93%	100%	93%	68%	89%	96%
Improved Knowledge	93%	96%	100%	100%	82%	82%	100%
New information	82%	89%	100%	82%	82%	75%	100%
Change Practice	68%	96%	96%	89%	64%	54%	79%
Increase Referrals	36%	14%	18%	39%	7%	14%	46%
Decrease Referrals	32%	79%	54%	32%	36%	64%	29%
Improve Assessment	89%	75%	89%	93%	82%	71%	100%
Empower Management	96%	96%	100%	86%	82%	86%	93%

assessed confidence in diagnosing and managing the covered conditions pre and post course. There were numerical improvements in self-assessed confidence for diagnosis and management in all seven topics covered. Statistically significant improvements were seen in all areas apart from osteoporosis and diagnosis of osteoarthritis where pre-existing confidence was already high. Twenty-eight (87.5%) of the thirty-two participants completed the intra-course evaluation. All respondents agreed that the format of the course was appropriate. Table 2 shows the percentage of respondents agreeing or strongly agreeing (ranking 4 or 5 on 5-point Likert scale) with statements regarding their experience at the course. The majority of respondents agreed that the course was beneficial across all areas assessed. A significant number of respondents reported that the course would change their referral patterns to rheumatology for the covered conditions.

Discussion

Our study has shown a significant improvement in knowledge of, and confidence in diagnosing and managing seven common rheumatologic disorders among general practitioners taking part in the Rheumatology GP Toolbox. Feedback from participants was extremely positive with regards to both the content and style of the programme. The course appears to have covered an unmet need with few participants having engaged in postgraduate education in rheumatology previously. We have developed an innovative educational tool that attempts to accentuate learning through interaction. There is evidence supporting increased efficacy of interactive lecture-based models of education delivery compared to more traditional didactic approaches.[9] Our model was designed based on our personal knowledge of the target audience, enabling a tailored approach. We believe this is particularly suited to postgraduate medical education where a one-size fits all approach is rarely sufficient or practical. The use of a novel education method can in itself be beneficial in increasing participant's interest and attention in the topic. Rather than being perceived as the use of a gimmick, we should view this as a useful strategy in engaging more effectively with our audience. A small number of previous studies have looked at novel methods of delivering education in primary care settings. Flys et al utilised a blended approach integrating tutor supported online education, an on-site workshop and individualised project-based interventions to educate primary care about HIV management. They showed good improvements in knowledge and high retention rates for participants.[10] Spiegel et al evaluated a hybrid approach to the education of primary care physicians about psychiatric disorders, effectively utilising a combination of educational sessions and a screening tool.[11] A Danish study found a positive effect of a multi-faceted model on the assessment and management of somatisation.[12] A previous musculoskeletal-oriented study found that a point-and-click multimedia based tool significantly improved clinical skills in the management of shoulder conditions among primary care physicians.[13]

Like any study ours has limitations. Although one of the authors had experience working in primary care there was no direct involvement of a currently practicing GP in the course design. The results are based on self-assessment among the participating physicians. The improvements demonstrated here in these measures cannot be directly interpreted as the physicians being any more competent in managing these disorders and may merely reflect their own perceptions. While self-assessment and self-direction of learning needs are widely viewed as integral components of continuing medical education, a number of studies have suggested that such methods may not correlate well with more objective assessments.[14] The further development of this educational programme will require objective assessments over a longer time period to assess retention and integration of the provided knowledge to individual practice. An audit of GP referrals to encompass both appropriateness and quality would aid evaluation, however the lack of a validated objective assessment method made this unfeasible in our setting. The model of programme delivery was designed based on our personal knowledge of the target audience and worked well in our local area, unique features of other healthcare locations and systems may necessitate modification of the approach prior to introduction of similar programmes. As such we would not suggest that our programme be directly replicated but rather would provide a framework for the delivery of medical education to experienced physicians. In conclusion, this pilot study establishes the feasibility of the Rheumatology GP Toolbox model as an educational method for disseminating current knowledge to primary care physicians and improved participant's self-assessed competence in diagnosis and management of common rheumatic diseases.

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Acute Stroke Unit Improves Stroke Management-Four Years on from INASC

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Abstract
The Irish Heart Foundation carried out the Irish National Audit of Stroke Care (INASC) in 2008. Management practices were significantly poorer than those in the UK Sentinel audits. Since then an acute stroke unit has been established in University Hospital Limerick. A stroke database was established. 12 key indicators of stroke management audited by INASC were identified. Results were compared to those in INASC. 89 stroke patients were admitted. 8 of the 12 key indicators scored significantly better than in INASC. 92.5% had a brain scan within 24hrs (INASC-40%, p=<0.001). 100% of ischaemic strokes received anti-thrombotics (INASC-85%, p=<0.001). 94% had rehab goals agreed by MDT (22% in INASC p=0.0000). 55% were treated in stroke unit (2% in INASC, p=0.0000). MDT input improved with regard to physiotherapy (87% vs 43% in INASC, p=<0.02) and SALT (74% vs 26%, p=<0.02). Stroke management has significantly improved from 2008, however some deficiencies remain.

Introduction

Stroke is the third leading cause of death in Ireland and is the leading cause of acquired motor disability[1]. The World Health Organization (WHO) estimates that there were 1.1 million strokes in the European Union (EU) in 2001 and estimates that this figure will increase to 1.5 million per year by 2025[2]. Acute stroke units have been shown to improve mortality rates, increase functional independence and reduce rates of discharge to long term care facilities[3-5]. Length of hospital stay, including rehabilitation, are significantly reduced[5]. The cost savings due to treatment in an acute stroke unit have been estimated at 1,313 bed days and 3 nursing home admissions per 100 stroke patients[5]. Despite this, in 2008, there was only one fully functioning acute stroke unit in Ireland[1]. The Irish Heart Foundation (IHF) was tasked with carrying out the Irish National Audit of Stroke Care (INASC) in 2008. Comparisons were made to the standard of care delivered in the United Kingdom, which had been assessed via the Sentinel Audits 2004 and 2006, and showed that Ireland was severely deficient in many areas of care, including a paucity of acute stroke units, insufficient access to neuro-imaging and limited availability of thrombolysis[1]. University Hospital Limerick (UHL) is a university teaching hospital with a catchment population of approximately 380,000[6]. A 4- bed acute stroke unit has been operational since January 2012. A stroke clinical nurse specialist, neuro-physiotherapists, speech and language therapist (SALT) and occupational therapist (OT) are available. There is 24 hour access to computed tomography (CT) imaging and thrombolysis. There is access to rehabilitation in 4 rehabilitation hospitals within the region, including a dedicated stroke rehabilitation unit. The aim of this audit was to compare the standard of stroke care in University Hospital Limerick in 2012 to INASC 2008 following implementation of the National Stroke Programme, including the development of an acute stroke unit.

Methods

A dedicated database of patients admitted with stroke was established in UHL as part of the National Stroke Programme. Data was prospectively collected and analysed for all patients admitted with stroke between April and September 2012. The study was carried out in the form of an audit, with results compared to those found in INASC. Items audited included time to commencement of aspirin, proportion of patients admitted to the stroke unit, length of stay in the acute stroke unit and total hospital length of stay, time to neuro-imaging, thrombolysis rate, proportion of patients seen by the multidisciplinary team (MDT) and discussed at a multidisciplinary meeting (MDM). Times are expressed in terms of hours and minutes (hh:mm). All of the data relating to length of time were non-parametric; therefore data were expressed in terms of median, minimum (min), maximum (max) and inter-quartile range (IQR). Data was analysed using IBM Statistical Product and Service Solutions (SPSS) Version 20.

Results

89 patients were admitted with stroke, of which 39 (43.8%) were female and 50 (56.2%) were male. The median age was 74 years (min=36, max=95, IQR=16). The various stroke/TIA subtypes are shown in Table 1.

Table 1 Stroke and Transient Ischaemic Attack Subtype

Type of Stroke	Ischaemic Stroke	Transient Ischaemic Attack	Intracerebral Bleed	Subarachnoid Haemorrhage
Number	73	8	7	1
% of Total	82%	9%	7.9%	1.1%

Length of Stay
The median length of acute hospital stay was 9 days (min=<1, max=76, IQR=11).

Neuro-imaging
99% of patients received neuro-imaging post stroke. The median time from stroke onset to imaging was 12.5 hours (min=1:05, max=143:36, IQR=22:04). Data was available for 47 patients only. In the case of the remaining patients, the time of onset was either unwitnessed and therefore unknown or was not recorded in the medical notes. 67% of patients received a CT scan within 24 hours of symptom onset. The median time from arrival to hospital to imaging was 4:58 hours (min=0:09, max=134:06, IQR=19:03). 38% of patients received imaging within 3 hours of arrival to hospital and 90% received it within 24 hours.

Anti-platelets/Anti-coagulants
81.5% of patients with ischaemic stroke were commenced on aspirin within 48 hours. Of those not commenced on aspirin, 1.2% had a haemorrhagic transformation, 7.4% were deemed palliative, 1.2% had a TIA while on aspirin and were changed to clopidogrel and 3.7% were on warfarin with sub-therapeutic INR and were treated with re-warfarinisation. In the case of the remaining 5% of patients, there was no identifiable reason for the delay in commencing aspirin, although, 100% of appropriate patients were on anti-thrombotic therapy by discharge. 8.2% of ischaemic strokes received thrombolysis.

Stroke Unit
55% of patients were treated in the acute stroke unit and 31% spent more than half their length of hospital stay in the stroke unit.

MDT Input
87% of patients were assessed by a physiotherapist while 74% had a formal swallow assessment carried out by a speech and language therapist. Only 3% were seen by an occupational therapist. However, since this study was carried out, a dedicated stroke OT has been employed by the hospital. 94% had their rehab goals discussed at a dedicated stroke multi-disciplinary

Table 2 A comparison of results found in UHL to those found in INASC

	UHL 2012	INASC 2008
Number of patients	89	2,173
Length of stay	9 days (median, IQR=11)	28.9 days (mean)
Time from stroke to scan	12:30 hours (median, IQR=22, 47 patients)	2.6 days (mean)
Received thrombolysis	8.2%	1%
Received imaging	99%	93%
Scan within 3 hours of admission	37%	4%
Scan within 24 hours of admission	92.5%	40%
Treated in stroke unit	55%	2%
>50% of hospital stay in stroke unit	31%	1%
Commenced on aspirin within 48 hours	80%	45%
Commenced on anti-thrombotic by discharge	100%	85%
Assessed by physiotherapy	87% (during admission)	43% (within 72 hours)
Swallow assessment	74% (by SALT during admission)	26% (assessed within 24 hours)
OT assessment	3%	22%
Rehab goals discussed by MDT meeting	94%	22%

meeting. A comparison between the results and those found in INASC can be found in Table 2[1].

Discussion

Our findings show that major improvements have been made in stroke management in UHL in the 4 year period from when INASC was carried out until 2012. Although most areas of stroke management have improved, there are still further improvements to be made. 55% of our patients were admitted to the acute stroke unit compared to 2% in INASC. The IHF advises that patients spend more than half their hospital admission in a stroke unit[1]. The number of patients achieving this has increased from 1% to 31%. Treatment in an acute stroke unit is an essential element of stroke care with patients experiencing significantly better functional outcomes and higher rates of discharge home. The better outcomes likely reflect care coordinated by stroke specialist nurses, access to specially trained staff and early commencement of rehabilitation[7]. UHL currently has four dedicated stroke beds compared to none in 2008. However, despite these 4 beds, there are still 44% of patients who do not get admitted to the stroke unit at any stage. This figure does incorporate some patients with a Transient Ischaemic Attack (TIA) who may be rapidly discharged prior to admission to the stroke unit, and some patients with severe stroke who died soon after hospital presentation. Even allowing for this, a significant amount of patients are not currently receiving the standard of stroke care currently expected. This may reflect insufficient capacity in the 4 beds currently available. A new 6 bedded stroke unit is currently under construction in UHL and is due for opening in 2015.

The IHF recommends that CT scanning be carried out within 24 hours of symptom onset[8]. This was achieved in 67% of patients with a median time of 12:30 hours compared to a mean of 2.6 days in INASC. This reduction has likely been achieved by a combination of factors. Ireland's first stroke awareness media campaign (FAST) led to an initial increase in the number of patients presenting to an Emergency Department within 3.5 hours of stroke onset[9], which could reduce the time from stroke onset to imaging. An increase in the rate of stroke thrombolysis (8.2% in UHL vs 1% in INASC) has led to the necessity of rapid access to CT scanning on arrival to hospital. Despite these improvements, 33% of patients did not have a CT scan within 24 hours of symptom onset. However, only 10% did not have a scan within 24 hours of admission. Intravenous thrombolysis can reduce neurological deficit and improve functional outcomes when given to the appropriate patient population[10]. One of the major deficiencies in stroke care identified by INASC was the lack of availability of thrombolysis, with a thrombolysis rate of just 1%[1]. UHL currently has a thrombolysis rate of 8.2%. Since this data was collected, the guidelines for thrombolysis have changed, allowing thrombolysis to be administered up to 4.5 hours. This will likely lead to a further increase in the thrombolysis rate. The IHF recommends that patients should be commenced on aspirin once their CT scan excludes haemorrhage or other stroke mimics[8]. Guidelines recommend that aspirin be introduced within 48 hours of stroke onset[11]. In UHL, 95% of appropriate patients were commenced on aspirin within 48 hours. All patients should be commenced on anti-thrombotic therapy by discharge in order to address secondary stroke prevention. 100% of appropriate patients were on anti-thrombotic therapy by discharge.

MDT input is an essential component to stroke care that has been shown to improve outcomes[12]. 94% of patients at UHL had their rehab goals assessed at a multidisciplinary meeting. This compares to just 22% of patients in 2008. INASC found that 43% were assessed by physiotherapy within 72 hours of admission and 22% were seen by occupational therapy within 1 week. We found that 87% of our patient population were assessed by physiotherapy during their admission. Although the figures are not directly comparable, they indicate that a large proportion of patients are currently receiving expert physiotherapy input. Just 3% of our patients were receiving OT input. This was a severe deficiency in acute stroke care, however OT input was being provided in the rehabilitation hospitals, which were not part of this audit. Since this audit was carried out a full time OT has been employed by the hospital for the sole care of stroke patients. The median length of hospital stay in UHL was 9 days. This compares to a mean length of stay of 28.9 days in INASC. This reduction in length of stay is likely multi-factorial. The provision of stroke units themselves has been shown to reduce hospital length of stay[13]. Greater access to thrombolysis can lead to improved functional outcomes[10], thereby reducing length of stay. In addition, UHL has access to rehabilitation beds in 4 rehabilitation units providing a discharge route from the acute hospital.

Implementation of the National Stroke Programme has clearly led to improved outcomes in stroke care. In a large university teaching hospital, development of an acute stroke unit in line with a thrombolysis protocol has led to improved length of stay and stroke outcomes. Although there has been an overall improvement, further acute stroke beds are required to improve access for all patients presenting with stroke. It is hoped that the opening of two further acute stroke beds in 2015 will ensure that this occurs.

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Access to Diagnostics in Primary Care and the Impact on a Primary Care Led Health Service

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Abstract
We undertook a postal survey of GPs to establish their current access to radiological and endoscopic tests. More than one fifth of GPs do not have direct access to abdominal (n=42, 21.4%) or pelvic (n=49, 24.6%) ultrasound in the public system. Where access is available public patients have an average 14 week waiting period. In stark contrast in the private system virtually all GPs have direct access (n=159, 99.2% and n=156, 98.8% respectively for abdominal and pelvic ultrasound) with an average wait of just over four days. Direct access to CT scan in the public system is available to the minority of GPs, e.g. n=31, 18.4% for chest scan, in the public system; even where available, there is an average 12 week wait for this. In comparison 151 (88.6%) GPs have access to CT chest scanning in the private sector with an average waiting time of 5.4 working days. Such limited access to diagnostics impacts on the delivery of a quality service.

Introduction

Patients present to general practice with a variety of undifferentiated symptoms. The general practitioner (GP) is a skilled diagnostician as symptoms and signs of serious and common conditions often overlap and there is a high prevalence of medically unexplained symptoms. As a result "the diagnostic process in general practice is as often a combination of shortcuts, loops and dead ends as it is a straight line going from presentation to diagnosis"[1]. It is not surprising therefore that the importance of appropriate access for GPs to diagnostics has been highlighted in a number of Irish Health Service Reports[2-5]. The Irish primary care strategy[2] provided the road map for a primary care led health service and it clearly states that "Primary care teams will have direct access to appropriate hospital-based diagnostic services based on local protocols, which can support earlier intervention and better on-going care for individuals". The A and E 10 point plan[4] promoted enhanced access to GP diagnostic services to support diagnosis, prevent GP referral to the emergency department and speed up treatment in the inpatient setting. The Tribal Secta Report[3] clearly outlined the importance of access to diagnostics for GPs and highlighted how lack of access left them with no option other than hospital referral. In many instances the only option available to GPs when a patient needed an urgent scan or test "given that waiting for out-patient appointments can be months" was to send a patient to the emergency department or attempt to get the patient admitted to an in-patient bed, a scarce and entirely inappropriate resource[3].

The Acute Hospital Bed Review[5] supported improved GP access to hospital and community diagnostics to reduce delays and avoid unnecessary admissions. The Comptroller and Auditor General[6] commented on a community based diagnostic initiative developed by the HSE in 2007 to improve GP access to xray and ultrasound. The resulting HSE report[7] found it led to reduction in waiting times, improved access for patients and that there was spare capacity within public and private facilities. Studies in Irish general practice reinforce the importance of these findings[8-10]. In a recent report two thirds of GP respondents indicated that their fee paying patients had difficulty accessing diagnostic tests with this figure rising to 99% of GMS patients[8]. The diagnosis of heart failure is severely hampered by lack of access to diagnostics with 54% of GPs unable to access Natriuretic Peptide testing and 99% unable to access echocardiography for their public patients[9]. An audit of a pilot project of direct access to xray and ultrasound demonstrated less referrals to emergency departments and more appropriate referral to OPD. Positive patient satisfaction and professional satisfaction were also reported[10]. Direct access to diagnostics in general practice appears to increase demand for testing but does not reduce appropriateness of testing or diagnostic yield[11,12] with imaging requests by GPs and hospital specialists showing similar diagnostic yields[13,14]. A London based group[15] explored the effect on patient management of providing direct access to diagnostic imaging tests - 71% of patients referred for diagnostic imaging were managed in the primary care setting[15]. An Irish study[16] showed a high positive detection rate from direct access to dexascan with 30% found to have osteoporosis and 44% osteopaenia. There has been a rapid increase in the use of diagnostic imaging in recent years. These investigations may not always be necessary. Guidelines for appropriate referral are needed to highlight relevant information such as risks, limitations and interpretation. One of the principle barriers identified in Ireland and the UK in relation to early detection of cancer was the lack of direct access to diagnostics[17,18]. The British Government intends to invest £450 million in the next four years to support GP direct access to diagnostics for patients with suspected cancer.

Early detection is likely to be cost effective but not cost saving leading to improved health outcomes and reduced treatment costs[18,19]. Direct access results in reduced waiting times from presentation to testing and treatment[20]. It has been shown that that direct access to diagnostic tests allows GPs to manage a substantial number of patients who would otherwise have been referred to the hospital out-patient department (OPD) or

CPD available online at www.imj.ie and questions on page 63.

specialist referral[1,11,21,22]. A systematic review of the literature indicted that multiple interventions to modify test ordering rather than single interventions were more successful[23,24]. In a Cochrane review[25] of interventions to improve outpatient referrals from primary to secondary care, effective interventions included dissemination of guidelines with a structured referral form. Limited uptake of direct access by GPs can be an issue highlighting the need to engage GPs in the planning and implementation of new services[20]. This paper reports on current GP access to radiological and endoscopic diagnostics in Irish general practice. Based on a survey of Irish GPs, it outlines current access for both public and private diagnostics and GP opinion on how this affects their ability to provide an effective service for patients. The international experience of GP access to diagnostics is explored, and proposed solutions to the problems identified are also included.

Methods

A postal survey of GPs on the Irish College of General Practitioners' (ICGP) membership database was carried out. The questionnaire with one reminder was sent to a random sample of 500 GPs. The response rate was 58.4% and the respondent profile is consistent with that of the full membership population. The ICGP is the professional body for GPs in Ireland and in excess of 95% of all GPs in the country are members. Data analysis was carried out using PASW (Version 18) using univariate and bi-variate analysis as appropriate. Descriptive statistics are reported for most analyses. The waiting times for tests reported are based on working days and excludes outliers.

Results

Overall, 44.3% of respondents were female and the majority (67.1%) were more than 15 years in practice; 39.9% of respondents had a primary practice location in a town and 45.7% were less than 5 miles from the nearest hospital for acute admissions. These statistics are in line with the overall population demographics. There was a marked difference in access to diagnostics for patients in the public healthcare system (Table 1) versus those in the private system (Table 2). In the public system direct access was defined as access to tests by a GP without referring to another practitioner first, which the patient could then receive free of charge. There was a great deal of variability in the waiting times for access to diagnostics in the public system. Waiting times showed a wider distribution and a higher mean in all cases in respect of the public system when compared to the private system. The narrowest differential in the mean between public and private was noted for chest xray and xray for trauma. The comparatively low numbers with direct access in the public system for CT scans and MRIs are of note when comparing the summary statistics. Of the tests listed, the average waiting times in the private system was longest for gastroscopy and colonoscopy – both in the region of 12 working days.

However, the comparable data for the public system was in the region of 12 weeks. In the public system 5% and 7.1% reported access within 15 working days for gastroscopy and colonoscopy respectively while in the private system access in this timeframe

Table 1 Direct access to diagnostics in the public system

	Direct Access	If yes, average waiting time in working days*			
	%	N	Range	Mean	Median
Chest Xray	99.6	120	1-22.5	4.78	2
Xray for Trauma	66.0	68	0.5-12.5	2.60	1
Abdominal Ultrasound	78.6	157	3-180	67.54	60
Pelvic Ultrasound	75.4	152	1-210	72.20	60
CT Scan Brain	28.5	51	1.5-120	43.53	30
CT Scan Chest	20.1	35	7.5-180	62.07	45
CT Scan Abdomen	18.4	31	7.5-240	72.66	55
MRI Brain	10.5	20	6-240	112.43	110
MRI Spine	10.5	18	6-180	99.36	120
MRI Musculoskeletal	9.3	21	6-360	120.40	120
Dexascan	75.1	142	5-300	104.26	90
Gastroscopy	64.0	121	0.5-130	59.27	60
Colonoscopy	57.1	113	0.5-180	68.58	60

*Outliers excluded

Table 2 Direct access to diagnostics in the private system

	Direct Access	If yes, average waiting time in working days*			
	%	N	Range	Mean	Median
Chest Xray	98.4	110	0.5-3.5	1.30	1
Xray for Trauma	84.8	95	0.5-3.0	1.17	1
Abdominal Ultrasound	99.2	159	1-7.5	4.13	5
Pelvic Ultrasound	98.8	156	1-7.5	4.23	5
CT Scan Brain	90.0	156	1-10	5.35	5
CT Scan Chest	88.6	151	1-10	5.37	5
CT Scan Abdomen	88.2	152	1-10	5.52	5
MRI Brain	95.9	169	0.5-10	5.80	5
MRI Spine	97.5	172	0.5-10	5.76	5
MRI Musculoskeletal	95.7	168	1-10	5.70	5
Dexascan	98.7	167	1-17.5	6.64	5
Gastroscopy	85.5	163	1-30	11.99	10
Colonoscopy	84.3	160	2-30	12.30	10

*Outliers excluded

Table 3 Opinions on Improved access to diagnostics

	Strongly agree	Agree	Neither agree/ disagree	Disagree	Strongly disagree
	%	%	%	%	%
Improved access to diagnostics would reduce my referrals to emergency departments	60.9	25.8	8.1	4.4	0.8
Improved access to diagnostics would improve the quality of my referrals to emergency departments	52.4	34.3	5.2	6.0	2.0
Improved access to diagnostics would reduce unnecessary admissions	52.8	34.3	8.9	3.6	0.4
Improved access to diagnostics would reduce my referrals to out- patient departments	63.3	27.0	6.9	2.4	0.4
Improved access to diagnostics would improve the quality of my referrals to out-patient departments	62.5	29.4	6.0	0.8	1.2

was reported by three-quarters of responding GPs. Among respondents 86% were of the opinion that increased access to diagnostics would reduce their referrals to emergency departments and improve the quality of their referrals (Table 3). When questioned about OPD referrals, 90% felt that improved access would reduce their referrals to out-patient departments while 92% felt this would improve the quality of these referrals. Overall 87% believed that improved access to diagnostics would reduce unnecessary admissions.

Discussion

The importance of appropriate access for GPs to diagnostics has been highlighted in a number of Irish Government Reports. The international literature suggests that access to diagnostics has the potential to minimise delay in diagnosis, support management in primary care and reduce onward referrals to emergency and out-patient departments. The results of this survey of a representative sample of Irish GPs outlines current access to radiological and endoscopic diagnostics in general practice. Striking differences are demonstrated between access for public and private patients. In all services, the access to diagnostics for public patients is unacceptably long when compared to private patients. There is no doubt that as a result, GPs are forced to refer patients inappropriately to overcrowded emergency departments in order to access diagnostic tests. This can be an unnecessary traumatic experience, particularly for elderly patients, and places an extra costly burden on hospital services. Patient access should be on the basis of need not on the ability to pay. GPs are highly trained specialists who are currently constrained in their ability to deliver a quality service to their patients due to limited access to diagnostics. The vast majority of respondents in this study indicated that increased access to diagnostics would facilitate them to reduce the number of referrals to both

emergency and out-patient departments, reduce unnecessary admissions and improve the quality of referrals overall.

It is time to empower GPs to provide the services they are trained to deliver in the interest of improved quality and safety for Irish patients. In a time of limited public expenditure, it is essential that all services are used appropriately. The provision of increased access for GPs to diagnostics will need to be flexible in terms of service provision. There will need to be analysis of the advantages of private versus public provision, community versus hospital based diagnostics and co-ordination across the primary and secondary care interface. The appropriateness of referrals would be enhanced by the development of joint GP-Hospital referral guidelines. The majority (92%) of Irish GPs have computerised medical records. The success of the electronic referral letters to cancer centres in Ireland illustrates the willingness of GPs to engage in structured referral processes based on national referral guidelines. In conclusion, GPs have limited access to diagnostics for public patients in stark contrast to their access for private patients. Irish GPs believe and international evidence concurs that increased access to diagnostics will lead to a reduction in diagnostic delay, reduce the number of referrals to both emergency and out-patient departments, reduce unnecessary admissions and improve the quality of referrals overall. This in turn will lead to more effective use of the hospital services and improve the quality of service for Irish patients.

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Chronic Kidney Disease and Obesity in Ireland: Comparison of Self-Reported Coronary Artery Disease in Population Study with Clinic Attendees

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Abstract
Obesity is a growing issue in Ireland. The link between obesity, CKD and CAD has not previously been described in the Irish population. The prevalence of obesity and CKD was compared across 3 groups: population based estimates with self-reported CAD, population based estimates without self-reported CAD (SLAN-07) and a random selection of cardiology outpatients with CAD. The SLÁN-07 is a representative survey of 1207 randomly selected participants ≥45 years. Validated methods measured parameters including waist circumference, blood pressure and markers of renal function specifically glomerular filtration rate (eGFR) and albumin: creatinine ratio. The Cardiology clinic surveyed a random selection of 126 participants ≥45 years with CAD. Similar parameters were measured using the validated methods utilised in SLÁN-07 study. Prevalence of obesity and renal disease was significantly higher in both CAD groups. At population level, risk factors were modelled using logistic regression to compare odds of participants with self-reported CAD with those without. Age, hypertension, obesity, elevated waist circumference, renal disease and diabetes are significantly associated with existing CAD. Obesity and CKD are more frequent in patients with CAD. Routine evaluation is essential to facilitate more intensive management of these risk factors.

Introduction

Cardiovascular disease is the leading cause of death in Ireland, at higher than average rates for the European Union[2,3]. The triad of obesity, glucose intolerance and hypertension is well described. Obesity has emerged as the most significant health threat of this century and has evolved globally through complex changes in lifestyle, diet and transportation. The prevalence of obesity in Ireland has been recently described in the National Adult Nutritional Survey and estimates 26% of men and 21% of women described as obese and 44% of men and 31% of women were overweight[4]. Obesity and CKD are thought to interact in the pathogenesis and progression of premature atherosclerotic disease[5]. Chronic kidney disease (CKD) is a known independent risk factor for cardiovascular disease, however often excluded in initial risk stratification[6,7]. Irish primary care physicians, cardiologists and hospital physicians practice high risk prevention strategies for existing sufferers of cardiovascular disease. However routine assessment of central obesity and renal function in all high risk patients is not practised. For the first time, we present a representative population based sample of Irish adults of middle age showing the association of obesity with CKD in Ireland without reported cardiovascular disease. To further investigate the association of obesity and CKD was estimated sample of participants attending a hospital based cardiology service. Comparison of the groups showed similar prevalence of CKD and obesity in participants with CAD.

Methods

The study is divided into two distinct parts. Firstly SLÁN-07, a population based cross-sectional study in the Republic of Ireland was conducted in 2007. The Irish population based random sample used all residential, non-commercial addresses in the Republic of Ireland as its sampling frame from 'The Irish GeoDirectory' compiled by the Irish Postal service. Non-institutionalized adults aged 18 years and older were recruited using multi-stage sampling with a known probability of selection for each dwelling; we have described sampling methods in more detail elsewhere[8]. 10,364 participants (62% of those invited to participate) completed a detailed health and lifestyle questionnaire. A 25% random subgroup of the study participants who were 45 years or older were selected by inviting all such participants within randomly selecting clusters to further undergo a comprehensive physical examination and basic laboratory testing. 1,207 individuals of 45 years and over participated in the physical examination and laboratory tested subgroup of SLÁN-07, with a response rate of 66% of participants, with 179 participants unable to participate and 613 participants declining to participate. Using the validated health and lifestyle SLÁN questionnaire, self-reported history of CAD, smoking and current medications were recorded. Based on this, participants were categorised into two groups according to individual reporting of CAD. Standard operating procedures have been described for physical measurements including body mass index, waist circumference, blood pressure[8] and biochemical analysis measured albumin to creatinine ratio, non fasting random serum cholesterol. A single serum creatinine was used to calculate the estimated glomerular filtration rate[9].

The second study was a cardiology clinic based study conducted in 2009. In a cardiology outpatient clinic 126 patients with clinically diagnosed CAD were randomly selected using non identifying case note numbers. Again, identical variables to those collected in the SLÁN 2007 study were measured using the same validated methods. Creatinine measurements for SLÁN 2007 were performed using the kinetic Jaffe method based on the Abbott Architect methodology by Biomnis, a commercial laboratory in Dublin, Ireland. The cardiology clinic bloods including serum creatinine were performed in a local hospital laboratory in Cork also using the kinetic Jaffe method using the Abbott architect. Creatinine measurements were IDMS (Isotope Dilution Mass Spectrometry) traceable. Obesity was defined as a Body Mass Index>30kg/m^2. Elevated waist circumference was defined as greater than 94cm for males and 80cm for females. CKD was defined as an eGFR less than 60mL/min/1.73m^2 or eGFR greater than 60ml/min/1.73m^2 with evidence of renal damage, indicated by an albumin / creatinine ratio greater than 30mg/g. Three CKD categories are presented in this study, exclusively low eGFR (<60mL/min/1.73m^2), low eGFR oral buminuria and a low eGFR and albuminuria (>30mg/g). Statistical analysis of estimates in each of the three subgroups was compared using a chi squared test. Logistic regression model was only used for the population sample (SLÁN-07) comparing the odds of reported cardiovascular disease with those without by the significant covariates. Data was analysed using STATA version 11(Timberlake). The study was approved by Research Ethics Committee of the Cork Teaching Hospitals.

Results

The prevalence of cardiovascular risk factors across the three samples is demonstrated in Table 1. The cardiology outpatient cohort was older with a male predominance. In the SLÁN-07 study, 59 participants (4.9%) reported CAD. Self-reported CAD cases in SLÁN-07 gave similar estimates of general and central obesity and all 3 categories of CKD as cardiology clinic participants. The prevalence of older age, obesity, eGFR <60ml/min/1.73m^2 and albuminuria were found to be significantly higher in both groups with CAD.

At the level of the Irish population, using logistic regression to model risk factors independently, the odds of participants with CAD were compared to those without CAD and non adjusted and

adjusted odds ratios are shown in Table 2. Age, hypertension, BMI >30kg/m2,elevated waist circumference, diabetes mellitus and the 3 categories of CKD, (low eGFR, low eGFR or albuminuria, low eGFR and albuminuria) were initially included independently in a univariate model. Participants with reduced eGFR and also albuminuria showed the strongest association with self reported CAD. All covariates were then incorporated in a stepwise manner in multivariate logistic model. Raised cholesterol and diabetes mellitus were excluded due to non-significance. Models included only one measure of obesity due to collinearity. Only age, hypertension, BMI>30kg/m2 or elevated waist circumference remain significant in a fully adjusted logistic model. The effect of CKD on cardiovascular disease was no longer significant.

Discussion

One quarter of the Irish population is estimated to be obese according to the most recent national survey.[4] This study confirmed the higher prevalence of obesity in participants with CAD. This is consistent with previous studies which have also demonstrated that a BMI>30kg/m2 is an independent risk factor for a major adverse coronary event[11]. The multiple pathogenic effects of obesity on the cardiovascular system are well documented with studies reporting both direct and indirect mechanisms. Many of the deleterious effects of obesity are mediated through a host of other cardiovascular risk factors including hypertension, glucose intolerance and hypercholesterolaemia[12]. Therefore, participants with obesity are likely to require aggressive therapeutic targeting of hypertension, smoking cessation, glucose intolerance and lipids. At present in Ireland, there are very few centres offering a combined multi-disciplinary approach to managing existing morbid obesity. However real change at population level as recommended by the national obesity strategy aims to use a multifaceted approach to implement significant change at population level.

CKD is well recognised as an independent risk factor for CAD, and the prevalence of significant CKD in the Irish population has recently been estimated at 11.2% of participants of 45 years and over[13]. The relationship between CKD and CAD is complex, both disease entities potentially implicated in the progression of the other. CAD participants have worse renal function but in addition many studies have shown that patients with CKD at the time of a major cardiac event are more likely to experience a poorer outcome[14]. This study clearly demonstrates that there is a higher level of CKD in patients with CAD. The demonstration of this association is consistent with previous studies showing that declining eGFR is associated with increased risk of cardiovascular events[14]. Serum creatinine and albuminuria were only measured on one occasion. Both of these variables are prone to fluctuations and may not necessarily reflect a true decline in renal function, however all participants studied were community dwelling or stable outpatient attendees making acute deterioration less likely. The combination of reduced GFR and the presence of low grade albuminuria are strongly associated with CAD in this population. In addition, although self reported medical status is highly useful and cost effective in large population based surveys, this methodology tends to underestimate prevalence. Patients under 45 years were not included in this study reflecting the growing risk of CAD and CKD with increasing age. Further studies are necessary to investigate the association between CAD and CKD in a younger population.

This study further emphasises the importance of population based surveys to ascertain prevalence estimates of obesity and CKD. Only participants over 45 years were studied so extrapolation of findings to the younger population is not possible. The cross sectional study design results in difficulty in showing a temporal association with risk factors and outcome however obesity is difficult to treat, often develops slowly and from a young age and is likely to be longstanding. CKD and obesity are associated with age, and CKD estimates are likely to be higher in this subset of the Irish population. The importance of CKD and obesity in the development of CAD cannot be proven in this study but confirms the significant prevalence of both in existing cases. It highlights the importance of acknowledging the significance of CKD, albuminuria and both general and central obesity in patients with CAD. Central obesity or albuminuria are not routinely or regularly monitored in cardiology clinics nor in cardiovascular assessment in primary care. Awareness among physicians and patients of the potential benefits in managing obesity and CKD aggressively is essential. We suggest a coordinated team approach involving cardiologists, primary care physicians and the allied services including dieticians in the care of these patients as part of a secondary prevention strategy. Body mass index and renal function are strongly associated with the development and

Table 1 Prevalence of cardiovascular risk factors comparing the Irish middle aged population in those with and without reported cardiovascular disease and the cardiac clinic sample.

	SLÁN-07 Without Self-reported Cardiovascular Disease (95% CI) N=1148	SLÁN-07 Self-reported Cardiovascular Disease (95% CI) N=59	Cardiac Clinic (95% CI) N=126
Age in Years mean (SD)	59.3 (9.7)	69.8 (9.5)	68 (10.3)
Obesity (BMI≥ 30)*	28.7% 26.1, 31.4%	45.8% 32.7, 58.9%	42.9% 33.8, 51.9%
Elevated Waist Circumference (Male≥94cm; Female≥80cm)*	70.6% 68.0, 73.3%	83.1% 73.2, 92.9%	77% 68.7, 83.7%
eGFR≤60ml/min/1.73 *	11.0% 9.1, 12.8%	36.4% 23.2, 49.5%	27.4% 19.4,35.4%
eGFR≤60ml/min/1.73 or Albuminuria	21.1% (18.7, 23.6)	40.4% (25.9, 55.0)	42.9% 33.2%, 52.5%
eGFR≤60ml/min/1.73 * and Albuminuria	2.6% (1.6,3.5)	14.9% (4.3, 25.5)	11.4% 5.2%, 17.6%
Albuminuria	12.9% 10.9, 14.9%	20% 8.5, 31.5%	23.6% 15.4%,31.8%
Hypertension*	55.9% 53.0, 58.8%	86.4% 77.4, 95.4%	95.1% 91.2%,98.9%
Hypercholesterolemia	79.5% 77.2, 81.9%	84.7% 75.3, 94.2%	86.95% 80.7%,93.2%
Diabetes*	7.6% 6.0. 9.1%	13.6% 4.6, 22.6%	15.4% 9.0, 21.9%
Current Smoker	18.6% 16.3, 20.9%	12.3% 3.5, 21.1%	27% 19.1, 34.8%

*Obesity: BMI>30kg/m2, Elevated Waist Circumference: Men>94cm, Women>80cm, eGFR<60ml/1.73m2 based on CKD-EPI formula

Table 2 Risk factors modelled using logistic regression comparing those with CAD (n= 59) to those without CAD (n=1148) at a population level in an unadjusted and fully adjusted model.

	Odds Ratio Unadjusted (p- value)	Odds Ratio Fully adjusted** (p- value)
Age in Years mean	1.1 (p<0.001)	1.1 (p<0.001)
Obesity (BMI≥ 30)*	2.1 (p=0.006)	1.9 (p=0.03)
Elevated Waist Circumference (Male≥94cm; Female≥80cm)*	1.04 (p<0.001)	1.03 (p=0.016)
eGFR≤60ml/min/1.73 *	4.7 (p<0.001)	1.6 (p=0.15)
eGFR≤60ml/min/1.73 or Albuminuria	2.53 (p<0.002)	1.0 (p=0.9)
eGFR≤60ml/min/1.73 * and Albuminuria	6.6 (p<0.001)	1.9 (p=0.2)
Hypertension*	5.0 (p<0.001)	3.4 (p=0.007)
Hypercholesterolemia	1.9 (p=0.27)	
Diabetes*	2.1 (p=0.04)	
Current Smoker	1.0 (p=0.99)	

*Obesity: BMI>30kg/m2, Elevated Waist Circumference: Men>94cm, Women>80cm, eGFR<60ml/1.73m2 based on CKD-EPI formula. Albuminuria based on Urinary Albumin / Creatinine ratio >30g/mg, raised cholesterol total cholesterol>5mmol or LDL>4 mmol or HDL<1.2 or on cholesterol lowering medication

Fully Adjusted model was adjusted for age obesity (general or abdominal obesity) hypertension and the 3 measures of CKD, Diabetes and Cholesterol were excluded from this model due to non-significance.

progression of CAD. Ensuring that all patients with CAD are screened and have subsequent access to the necessary services is essential to optimise outcomes in CAD.

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New Hazards in Paediatric Poisoning Presentations

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Abstract
Accidental ingestion is an important preventable cause of childhood morbidity. All accidental ingestion presentations (n=478) to a tertiary paediatric ED from January 2010 to December 2011 were analysed. These results were compared with a similar study in the same institution ten years previously in 2001 and showed that while accidental ingestions constituted a higher proportion of presentations (0.5% in this study v 0.45% in 2001), fewer had investigations performed (21% v 35%) and fewer were admitted (7% v 20%). Accidental ingestions account for 0.5% of presentations and are an important focus of home safety information for parents and guardians. Paracetamol (n=67, 14%) and liquid detergent capsules (n=44, 9.2%) were the two most common substances implicated in these presentations, and have the potential to cause severe morbidity and mortality.

Introduction
Children under 10 years old accounted for half of the calls to the Poisons Information Centre in 2010.[1] Studies have reported that poisoning accounts for up 0.28% of ED visits, with median age 24 months and paracetamol the most common substance ingested. Most cases of acute poisoning are accidental, benign and non-toxic.[2-5] A prospective cohort study noted at least one incident of poisoning or suspected poisoning in 19% of children by age three.[6] The aim of this study is to analyse accidental poisoning cases presenting to a tertiary paediatric hospital, to determine the most common substances implicated in these presentations and to compare the results with a similar study undertaken in the same institution ten years previously.[7]

Methods
This is a retrospective review of the Temple Street Children's University Hospital (TS CUH) Emergency Department (ED) information management system (Symphony, Ascribe Ltd). This system is used to identify cases of accidental ingestion by discharge diagnosis. All episodes discharged from ED under 'Toxicology, Accidental' from the 1st of January 2010 until 31st of December 2011 were included. Demographic details, triage diagnosis, length of stay and outcome of episode were available directly from the system, while all other information was gathered from notes.

Results
88623 attendances to TSCUH ED were recorded between 1st January 2010 and 31st December 2011. Of these, 478 (0.54%) were discharged with a discharge diagnosis under the heading of 'toxicology'. 53.1% were male. Median age on presentation was 2 years and 5 months. The median length of stay in the ED was 2 hours and 37 minutes. The most common category of discharge diagnosis was 'accidental drug poisoning', accounting for 51.5% of presentations. Household products were responsible for 25% of presentations. The most common substance implicated was

paracetamol (14%). Liquid detergent tablets were responsible for 9.2%. No investigations were performed in 79.3% of episodes. Paracetamol levels were performed at 4 hours post-ingestion in 4% of episodes, as ingestion was potentially over 150mg/kg as per guidelines. None of the paracetamol levels performed required treatment. Other toxicology tests were performed in 4.8% of episodes – including urine and serum toxicology for benzodiazepines, salicylates and other drugs. 93% of presentations required observation. In 4% of children the administration of activated charcoal by NG was recommended by Toxbase – including cases of recent benzodiazepine and tricyclic antidepressant ingestion. 3% of cases required other treatment: including drinking milk. There was evidence that Toxbase was consulted in 76.9% of the applicable cases, and the NPIC was contacted in 16.2%. 92% of episodes were discharged from ED – with review scheduled in 7.3% of cases. Of those admitted, 91% went to the ward and 9% to ICU.

Table 1: Comparing 2001 and 2010-2011

	2001	2010-2011
% of presentations	0.45%	0.55%
Male	47%	53%
Drugs/Pharmaceutical	61%	51%
Most common	Paracetamol	Paracetamol
Second most common	Benzodiazepines	Liquid detergent tablets
Investigations	35%	21%
Admitted	20%	7%
Deaths	0	0

Discussion

In 2001, a comparable study was conducted in the ED of TSH, when accidental ingestions accounted for 0.4% of presentations. The male:female ratio did not change significantly. Drugs and pharmaceutical products accounted for 61% of presentations in 2001 but only 51% in 2010-2011. Paracetamol was the most common substance accidentally ingested in both studies. The second most common substance ingested in our study was liquid detergent tablets, whereas these were not available in 2001 and the second most common substance ingested at that time was benzodiazepines. There were more investigations performed in the 2001 cohort – in 35% of presentations, while only 21% of presentations had investigations performed in our cohort. More of the 2001 cohort (20%) were admitted than this study (7%). The NPIC campaign in 2012 highlighted the need to educate parents and caregivers further on the hazards of household substances.

Paracetamol should be kept out of reach and in child-resistant containers. There were numerous cases of benzodiazepines loose in handbags, which should be kept in child-proof containers. Liquid detergent capsules, first manufactured in 2001, are an emerging threat and appear to be very accessible – potentially based on their easy-to-reach location in kitchens or utility rooms. Morbidity in accidental ingestions of liquid detergent capsules can be varied and severe, and involve the eyes, the upper gastrointestinal tract and the respiratory system.[8-13] Reducing the accessibility of these hazards should include focusing on the provision of child-resistant packaging.

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Sweet Syndrome Revealing Systemic Lupus Erythematosus

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Abstract
Sweet Syndrome is an acute inflammatory skin eruption which is rare in children. We report a case of childhood Systemic Lupus Erythematosus (SLE) that presented with Sweet syndrome. This case is a unique presentation of a common disorder which provides a new facet for the differential diagnosis of SLE in children. It is also the first paediatric case to be reported in a Caucasian child.

Introduction

SLE is a chronic auto-immune disorder characterised by multi-system organ involvement and marked clinical heterogeneity. Although the underlying aetiology remains to be fully elucidated, it is thought that SLE may be triggered by several factors including environmental pathogens and infection in those with an underlying genetic predisposition[1]. Sweet syndrome is a reactive neutrophilic dermatosis which is rare in children[2]. It was described in 1964 by Dr Robert Douglas-Sweet, who documented an acute inflammatory skin eruption associated with fever and leucocytosis[3]. Diagnosis requires the presence of two major and two of four minor criteria[4]. Major criteria include abrupt onset of

painful erythematous plaques/nodules and histological evidence of dense neutrophilic infiltrate. Minor criteria include pyrexia>38°C; elevated ESR/CRP/leucocytes/neutrophils; response to corticosteroids and association with an underlying haematological disorder, inflammatory disease or recent respiratory or gastrointestinal infection. Characteristically, Sweet-syndrome responds rapidly to corticosteroids[5].

Case Report

A 12 year old female developed generalised arthralgia, lethargy and anorexia 3 weeks following an upper respiratory tract infection. She was systemically unwell with pallor, drowsiness and dehydration. She developed swelling and restriction of the right wrist and left ankle. Examination of the skin revealed a papulo-vesicular rash on the elbows and ankles (Figure 1). Initial investigations showed anaemia: (haemoglobin:11.1g/dL) with thrombocytosis(platelets:467x109/L). ESR and CRP were raised (99mm/hr and 84mg/l respectively). Liver transaminases were elevated: AST=192U/l, ALT=596U/l. Serum albumin was low: 27U/l. Complement C4 was reduced: 0.07g/L while immunoglobulin levels revealed high IgG:57.3g/L. Biopsy of the papulo-pustular lesion revealed a florid neutrophilic infiltrate with apoptotic debris smeared between collagen, confirming severe neutrophilic dermatosis and a diagnosis of Sweet-syndrome (Figure 2). The differential diagnosis included SLE, malignant haematological disease and gastroenterological disease. The remainder of the immunological profile demonstrated a strongly positive homogenous ANA (1:2560) and anti-DS-DNA antibodies were evident at 26 IU/ml. Anti-cardiolipin IgG antibodies were elevated at a titre of 41 GPLU/ml. She was commenced on intravenous methyl-prednisolone to which she responded well. Subsequent to this admission, the DNA crithidia titre was found to be significantly elevated: 1:160 and DNA-ELISA was elevated at 16 IU/ml confirming SLE. She was commenced on azathioprine. At last review she had no joint pain or swelling and the rash had completely resolved.

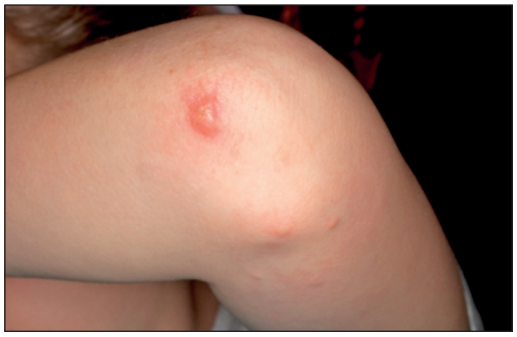

Figure 1

Papulo-vesicular rash on the elbow

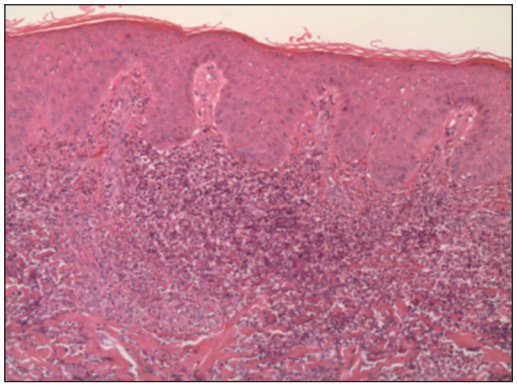

Figure 2

Skin Biopsy, Biopsy of this lesion showed neutrophilic dermatosis with massive infiltration of the dermis

Discussion

Recent studies suggest that childhood-onset SLE has a more severe disease course than adults. Aggressive treatments incorporating biological agents have improved survival in childhood SLE, but the disease is still associated with significant morbidity. Early diagnosis is essential if disease-associated complications are to be prevented. The association of SLE with Sweet syndrome has been reported in adults[6], but to date there is only 1 report in the paediatric population[7]. The pathogenesis of Sweet syndrome remains incompletely understood. It has been proposed that it may result from a hypersensitivity reaction to an antigen such as bacteria, virus or even tumour. Different studies have implicated the roles of immune complexes, autoantibodies, cytokines, dermal dendrocytes, HLA serotypes and leucotactic mechanisms in its development[8]. It has also been postulated that photosensitivity plays a role in its development providing a possible link with photosensitivity commonly associated with SLE. There are very few reports of Sweet syndrome in paediatric patients. One of the youngest patients reported was 5 weeks of age and subsequently found to have non-B54 HLA types[9]. Despite this there is no clear genetic association. Another case reports an infant with known chronic granulomatous disease who presented with methicillin sensitive staphylococcus aureus lymphadenitis supporting the hypothesis that Sweet syndrome may be part of a complex of inflammatory conditions. Sweet syndrome has been associated with a variety of disease states including acute myeloid leukaemia and inflammatory bowel disease. Newer treatment options include intravenous immunoglobulin and anti-interleukin-1 receptor antagonists[10].

Sweet syndrome is rare but its onset may herald a serious underlying disorder requiring prompt diagnosis and treatment. This case reports an unusual presentation of SLE, which highlights the importance of considering it in the differential diagnosis of a child with Sweet syndrome. The child in this report was treated early with excellent outcome, emphasising the importance of recognizing and treating early this emerging disease association.

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Erdheim-Chester Disease

Sir

We read with great interest the excellent and informative case report by Tevlin et al describing a case of Erdheim-Chester disease (ECD), a form of non Langerhans cell histiocytosis, of the gastrointestinal tract.[1] In the case presented by the authors, a laporotomy was required for definitive diagnosis, as percutaneous biopsy of the retroperitoneal adenopathy was non diagnostic. We would like to share a similar case of this rare disorder, encountered recently in our institution, where a different approach was utilized by performing a percutaneous renal biopsy allowing for the correct diagnosis to be made without the need for laporotomy.

A 63 year old male presented with recurrent episodes of exertional chest pain and dyspnoea. He had a background of stage 3 chronic kidney disease, renal artery stenosis, hypertension and previous ischaemic stroke. A CT thorax on admission revealed bilateral pleural effusions with pleural enhancement and overlying subsegmental atelectasis with scattered foci of consolidation. A cuff of soft tissue was noted around the entire thoracic and abdominal aorta, consistent with a periarortic infiltrative process. Concentric, non-enhancing soft tissue masses were also seen to encase and involve both kidneys, particularly the left with somewhat reduced perfusion of the left renal parenchyma (Figure 1). Bilateral renal artery stents were present from previous percutaneous intervention for renal artery stenosis. Right pleural drainage was performed and biochemistry confirmed an exudative efffusion. Ultrasound guided biopsy of the left kidney and perinephric soft tissue was also performed, the histology of which revealed fibroconnective tissue with sclerosis, scattered chronic inflammation, and admixed macrophages (CD68 positive, S100 negative). No mutation in the BRAF gene was identified, which has been reported in 50% of ECD. The case was discussed at the Haematology multidisciplinary meeting. Based on the histological findings of the left renal and perinephric soft tissue biopsy, periaortic infiltration and resultant renal artery stenosis, a diagnosis of ECD was made. Isotope bone scan did not reveal any osseous features associated with ECD, however bone involvement although common, is not a diagnostic requirement. Our patients acute presenting symptoms resolved following drainage of the pleural effusions. He was commenced on interferon-alpha therapy and remains well at follow-up.

Diagnosis of ECD can prove challenging as alluded to in the case report by Tevin et al, due to the variable presentation, ranging from

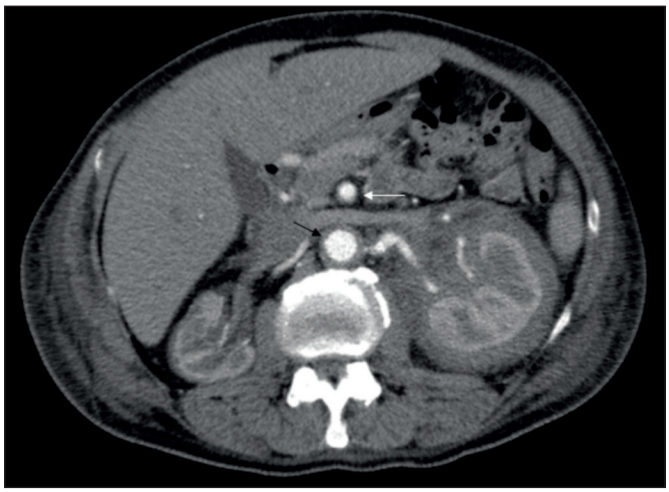

Figure 1 Axial arterial phase CT of the upper abdomen showing the perinephric soft tissue which surrounds both the kidneys and renal vessels. There is also a cuff of periaortic soft tissue which surrounds the entire length of the aorta (black arrow) and the origin of major branch vessels, including the superior mesenteric artery on this image (white arrow)

asymptomatic subtle soft tissue infiltration to involvement of multiple organs.[1] The imaging findings described above in our case were typical and highly suggestive of the diagnosis from the outset, but biopsy was ultimately required for confirmation. It was fortunate that the perinephric soft tissue mass was amenable to percutaneous image guided biopsy and surgery was not required to confirm the diagnosis. Indeed, Figure 1 from the case by Tevin et al, demonstrates a cuff of periaortic soft tissue which was similar to our case. In contrast, our patient did not display involvement of the gastrointestinal tract. Although rare, ECD should be considered when an infiltrating retroperitoneal process is encountered on imaging studies as patients may be asymptomatic in the initial stages.

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The Role of Oximetry in Patients with Obstructive Sleep Apnea

Sir,

Obstructive Sleep Apnea (OSA) is estimated to affect one in five adults (approximately 100,000 adults in Ireland). One in fifteen adults has moderate to severe OSA. The average waiting time for a polysomnography (PSG) takes several months. OSA is a major contributor of cardiovascular, metabolic co morbidities and is also recognised to greatly increase the risk of motor vehicle accident and injury which have a substantial implications for the health service.[1]

A retrospective charts review of 48 consecutive referrals to Peamount Healthcare were examined. Demographics, clinical assessment and oximetry results were recorded. All 48 patients were given a CPAP trial for 2 consecutive days and their oximetry data and Epworth sleep score were compared at admission and at day 2. 33 (69%) patients were male . 4 (8.3%) patients were aged less than 30, 24 (50%) patients were aged between 30 and 40, 14 (29.2%) patients were aged between 41 and 50, 6 (12.5%) patients were aged greater than 50. 45 (94%) patients complained of snoring, 36 (75%) patients had witnessed apnea, 37 (77%)patients complained of daytime somnolence. 32(67%) patients had an Epworth Sleep Score (ESS) of greater than 11 and after 2 days of C PAP trial, there were a 100% improvement (ESS < 11). 32 (67%) patients had a desaturation index of greater than 15% on their oximetry. After 2 days of C-PAP trial, all these 32 patients again had a 100% improvement (Desaturation Index < 5%). 16 (33%) patients with inconclusive results were referred for full PSG and 5 (10%) patients were diagnosed with OSA. Although PSG is the gold standard in diagnosing OSA, our retrospective study has shown to reduce waiting time for PSG at Peamount healthcare. With only 33 % of patients being referred for PSG, this study shows that 67% were diagnosed and started

on C PAP within a few weeks from their referral date. In Ireland only 25% of patients with OSA has been identified.[1] With disease awareness increasing, it is expected that the rates of OSA diagnosis will increased by 2 to 3 folds. UK estimates suggest that a population of 500,000 will generate 500 referrals and 200 new prescriptions for C PAP per year.[1] These facts reinforce the importance of oximetry and C PAP trial in assessing and managing patients with OSA in the Irish healthcare

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Prescribing Scenarios at a Glance

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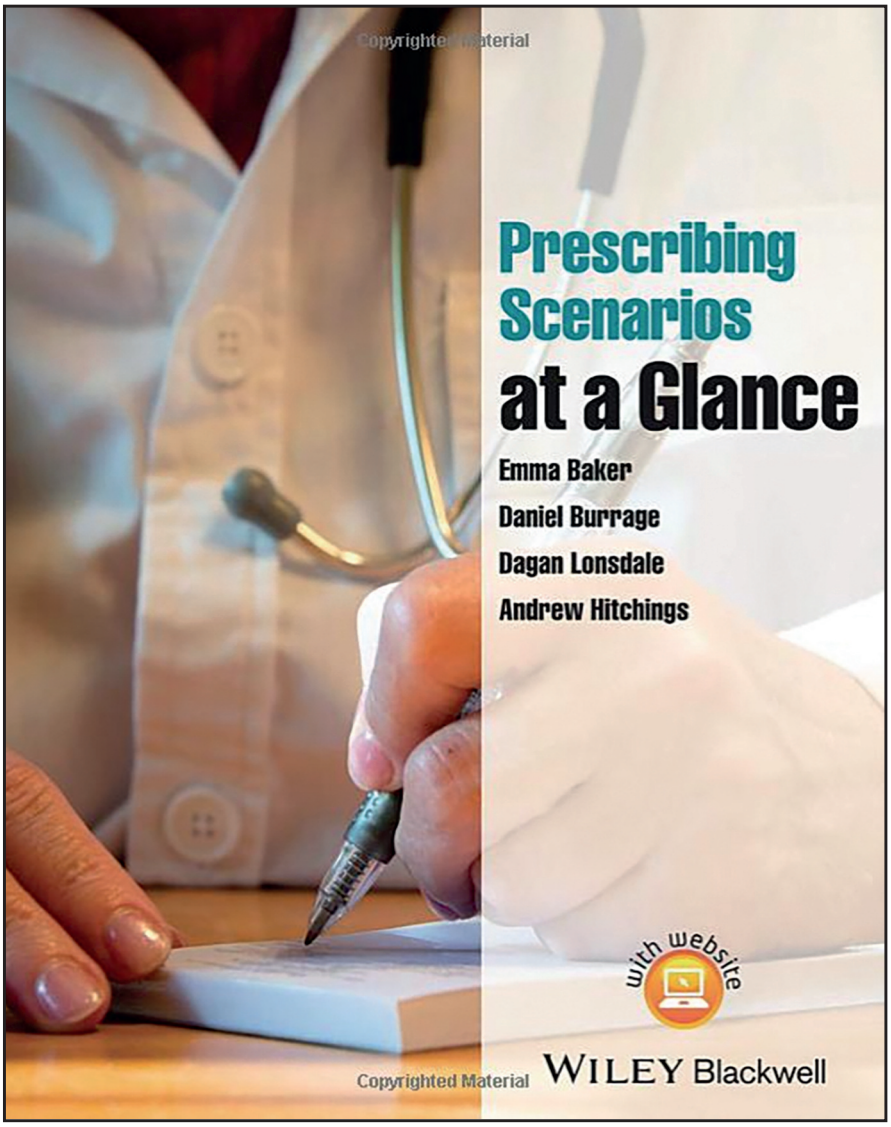
Publisher: Wiley Blackwell 2014



This book is one in the "at a glance" series primarily aimed at medical students and junior doctors, but would still be of value to senior clinicians and indeed other healthcare professionals. This first edition was published this year (in paperback) and it addresses rational prescribing in 2 sections; the acute "take" and when "on-call" in the hospital. Following a thorough and very useful 14 page introduction on practical prescribing, a total of 50 common scenarios (14 in the acute "take" and 36 "on-call") are described in a realistic and consistent manner in the following format: History, Examination, Investigations, followed by a task assigned to the reader/would-be prescriber. The reader is then asked to write their response as a "prescription" in the accompanying work book, which may then be checked against the authors' ideal response. Where the "patient" has already been prescribed medicines, these are already recorded in the work book. Thus the reader is challenged to replicate real-life prescribing challenges in a realistic manner, making allowances for interactions, advanced age, etc. I am sure it will make learning and revision much more interesting and immediately relevant to the reader and when the teaching within it is absorbed, it should give confidence to the junior doctor, especially when "on -call" at night or at weekends.

The authors' discussions of each case are thorough and although some specialists may disagree (rarely I suspect) with some minor points, on the whole the book is up to date, thorough, comprehensive, well written and produced. Further reading suggestions are offered at the end of each case, as are cross linkages both within this book and to others in the series such as Medical Pharmacology at a Glance. The book has website back up and the prescription charts of the workbook can be downloaded and printed from the website, enabling the reader to repeat the challenge months or years later as revision. This book should be warmly received by those at whom it is aimed, and is an excellent teaching resource which blends clinical pharmacology and clinical medicine into good practical therapeutics.

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Continuing Professional Development

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

Referral Letters to the Emergency Department: Is the Medication List Accurate?

M McCullagh, P O'Kelly, P Gilligan. Ir Med J. 2015; 108: 38-40.

Question 1
The number of letters included in the study was

a) 72
b) 82
c) 92
d) 102
e) 112

Question 2
The number of computer generated letters was

a) 50
b) 60
c) 70
d) 80
e) 90

Question 3
The number of hand written letters was

a) 32
b) 36
c) 40
d) 44
e) 48

Question 4
The patient's allergy status was recorded in

a) 10% cases
b) 14% cases
c) 18% cases
d) 22% cases
e) 26% cases

Question 5
The dose/frequency of drug administration was recorded in

a) 14% cases
b) 16% cases
c) 18 cases
d) 22 cases
e) 24 cases

Can You Die From Obstructive Sleep Apnoea Syndrome (OSAS)?

G O'Carroll, E Doody, C Vaughan, L Doherty. Ir Med J. 2015; 108: 40-3.

Question 1
The number of doctors who responded to the survey was

a) 181
b) 183
c) 185
d) 187
e) 189

Question 2
The prevalence of OSAS in the adult population is

a) 2-4%
b) 5-7%
c) 8-10%
d) 11-13%
e) 14-16%

Question 3
The number of doctors who believe that OSAS can be a direct cause of death is

a) 73
b) 75
c) 77
d) 79
e) 81

Question 4
The number of doctors who believe that OSAS is an indirect cause of death is

a) 171
b) 173
c) 175
d) 177
e) 179

Question 5
The number of doctors who had put down OSAS as a cause of death was

a) 22
b) 24
c) 26
d) 28
e) 30

Access to Diagnostics in Primary Care and the Impact on a Primary Care Led Health Service

M O'Riordan, G Doran, C Collins. Ir Med J. 2015; 108: 53-5.

Question 1
The response rate to the survey was

a) 54.4%
b) 56.4%
c) 58.4%
d) 60.4%
e) 62.4%

Question 2
The average waiting time for an ultrasound in the public sector

a) 8 weeks
b) 10 weeks
c) 12 weeks
d) 14 weeks
e) 16 weeks

Question 3
The average waiting time for an ultrasound in the private sector

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

Question 4
The average wait time for a CT scan in the private sector is

a) 4.4 days
b) 5.4 days
c) 6.4 days
d) 7.4 days
e) 8.4 days

Question 5
The proportion of GPs who have access to a chest CT scan in the public sector is

a) 12.4%
b) 14.4%
c) 16.4%
d) 18.4%
e) 20.4%

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