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In this Month's IMJ

Testicular sperm extraction and intracytoplasmic sperm inlection: outcomes in a specialist fertility centre: Thornhill et al point out that testicular sperm extraction (TESE) and intra-cytoplasmic injection (ICSI) are fertility options for couples with severe oligospermia or azoospermia. In their study 146 TESE procedures were performed on 136 men. The fertilization rate per cycle was 34% for those with obstructive azoospermia, and 16% for those with non-obstructive azoospermia.

Table 2: Sperm retrieval rates post-TESE for OA, NOA and all males with subsequent ICSI data, showing the number of cycles, fertilisation, pregnancy and miscarriage rates.

	Patients (N)	Sperm Retrieval Rate (N)	Patients proceeding to ICSI (N)	Mean No. of Cycles (Range)	Total No. of Cycles	Fertilisation rate/ cycle (N)*	Clinical pregnancy rate/cycle (N)	Miscarriage rate/ cycle (N)
OA	80	99% (79)	45	1.72 (1-12)	83	34% (28)	27% (22)	7% (5)
NOA	56	32% (18)	13	3.25 (1-6)	31	16% (5)	13% (4)	3% (1)

Review of time to surgical decompression in traumatic spinal cord injured patients: Smith et al have audited the time intervals between spinal cord injury and surgical intervention. The paper covers the 3 year period 2010, 2011, 2012 and includes 110 patients. The patient outcomes were 17 complete tetraplegics, 44 incomplete tetraplegics, 19 complete paraplegics, 30 incomplete paraplegics. The median time interval between the injury and surgical intervention was 27 hours. The factors that affect timing are ambulance availability, patient instability, lack of awareness of the importance of quick transfer, and lack of a reserved theatre space. The authors recommend the appointment of a spinal co-ordinator at the National Spinal Injuries Unit.

Table 1: Duration of each stage of the referral process to NSIU & surgical intervention

From	To	Median (Hours:mins)	IQR (Hours:mins)
Onset of injury	Arrival at local hospital	1:25	1:26
Arrival at local hospital	Referral to NSIU	4:17	4:28
Referral to NSIU	Arrival at NSIU	6:25	3:35
Arrival at NSIU	Surgical intervention	11:25	21:32
Onset of injury	Arrival at NSIU	13:07	10:30
Onset of injury	Surgical intervention	27:00	48:00

In-hospital paging systems: an effective method of communication between hospital staff in 2015: Carey et al have undertaken a detailed study of the pager call patterns during day time and out-of-hours. They found that 3 minutes per hour were spent dealing with pages. Sixteen per cent of the pager calls were made during designated pager-free periods.

Table 1. Distribution of pages received by interns during specific work periods. Average pages per hour were calculated and are presented along with intern's estimations of pages received during the same periods, as recorded in the survey.

	Weekday (9am -5pm)	Extended Day (5-8pm)	On Call Weekday (5pm-9am)	On Call Weekend (9am-9pm)
Total Pages (n=407*)	259	34	41	73
Total Hours (n=252)	160	12	32	48
Average Pages (/hr)	1.6	2.8	1.3	1.5
Questionnaire	2.3	3.7	1.6	2.6

Evaluation of presenting symptoms and long-term outcomes of patients requiring excision of a transobturator tape (TOT): Forde et al state that the transobturator tape (TOT) is an effective procedure for stress incontinence. In a series of 228 TOT cases, 16 patients required removal of the TOT due to erosion of the mesh. Their symptoms included dyspareunia, dysuria, persistent incontinence, and groin pain. Eleven patients needed a further surgical procedure and the other 5 patients didn't need any other intervention.

Table 1: Patient demographics

Patient demographics	Mean	Range
Age of all patients undergoing TOT (n=228)	49.8 years	22.7 - 83.5 years
Age of patients with TOT erosion (n=16)	48.8 years	34.5 - 76.6 years
Mean weight of patient with TOT erosion	72.2kg	55 - 110kg
Time from surgery to presentation with symptoms of erosion	14.5 months	0.5 - 43.8 months

Patients hospitalized with an acute exacerbation of COPD: is there need for a discharge bundle of care? Migone et al have assessed the discharge plan for 174 hospital admissions for acute exacerbation of COPD. The delivery of the discharge bundle of care was- assessment of oxygen requirements 86.6%, inhaler technique 59.2%, referral to pulmonary rehabilitation 11.1%, influenza advice 17.8%, and pneumococcal vaccine advice 16.7%. The authors urge the introduction of discharge planning.

Table 3: Proportion of Interventions Delivered

Intervention Delivered	n	%
Inhaler technique checked	103	59.2
Written management plan given	40	23.0
Smoking cessation assistance offered	39	59.1
FEV1 recorded	100	57.5
Oxygen requirements assessed	151	86.8
Referral to pulmonary rehabilitation	19	11.1
Follow-up arranged	135	77.6
Pneumococcal vaccine advised	29	16.7
Influenza vaccine advised	27	17.8[1]
Arrangements for vaccination made	15	8.6

The use of inhaled Nitric Oxide in a tertiary neonatal intensive care unit: Breatnach et al describe the use of inhaled Nitric Oxide in 32 infants with persistent pulmonary hypertension of the newborn (PPHN). The median time to initiation of treatment after birth was 4 hours and the duration of treatment was 74 hours for term infants and 66 hours for preterm infants. The authors encourage Units to enroll their iNO cases with the European iNO Registry.

Table 1: Clinical Characteristics and outcomes of Infants receiving iNO

	Term Infants n=23	Preterm Infants n=9	p
Gestation (weeks)	40 [39 - 41]	27 [24 - 31]	<0.001
Birth weight (g)	3550 [3310 – 3860]	900 [773 – 1365]	<0.001
Male	12 (52)	8 (89)	0.1
Diagnosis			
Meconium aspiration syndrome	11 (48)	1 (11)	
Sepsis	1 (4)	1 (11)	
Hypoxic Ischaemic Encephalopathy	4 (17)	0	
Transient Tachypnea of the Newborn	2 (9)	0	
Pulmonary Hypoplasia	0	4 (45)	NA
Pneumothorax	2 (9)	1 (11)	
Associated with Trisomy 21	2 (9)	0	
Polycystic Kidney Disease	1 (4)	0	
Severe RDS	0	2 (22)	
Surfactant prior to iNO	17 (74)	8 (89)	0.6
Inotropes prior to iNO	10 (71)	4 (44)	0.6
High Frequency Oscillation	3 (13)	2 (22)	0.6
iNO Start time (hours of Age)	4 [1 – 10]	5 [2 – 8]	1.0
iNO duration (Hours)	74 [27 – 114]	66 [23 – 129]	0.75
iNO Maximum Dose (ppm)*	40	20	0.04
Rebound Hypoxemia	2 (9)	1 (11)	1.0
Length of NICU stay in survivors (days)	11 [9 – 15]	48 [29 – 75]	0.007
Abnormal cranial ultrasound scan	3 (13)	6 (67)	0.006
Death Before discharge	4 (17)	4 (44)	0.18

The establishment of a pilot paediatric obesity clinic at the University Hospital, Limerick: Dowd et al describe the organization and clinical assessment of children attending an obesity clinic. Important components include a detailed dietary and exercise history, anthropometric measurements, and biochemistry investigations. The challenges of providing this service for children are highlighted.

Table 1: Descriptive characteristics for age, anthropometric measures and selected cardiometabolic risk factors. Data are presented as mean (SD).

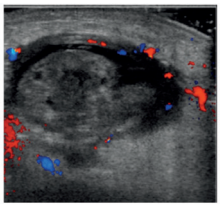
	All(n=12)	Male(n=5)	Female(n=7)
Age	8.1 (3.2)	8.7 (3.0)	7.7 (3.6)
Height (cm)	161.2 (8.2)	160.8 (10.3)	161.9 (4.5)
Weight (kg)	79.8 (26.4)	86.0 (30.8)	69.5 (17.0)
Waist-to-Hip Ratio	0.99 (0.04)	0.98 (0.04)	1.01 (0.03)
Waist-to-Height Ratio	0.64 (0.07)	0.68 (0.09)	0.63 (0.07)
BMI > 90th Percentile	11	5	6
BMI > 98th Percentile	5	2	3
Elevated Blood Pressure	2	1	1
Elevated Triglycerides	2	1	1
Elevated Insulin	4	3	1
Elevated Glucose	2	2	0

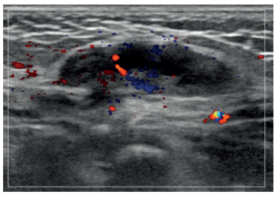
Insights and concerns of patients and GPs regarding introduction of universal health insurance in Ireland: Breen et al have sampled the opinions of GPs and patients about the proposed introduction of universal health insurance (UHI). The majority of patients 79.4% and GPs 96.7% have a poor understanding of how UHI will be implemented. Both stakeholders agree that UHI will lead to an increase in waiting times for appointments.

Table: Stakeholders views on the utility of UHI.

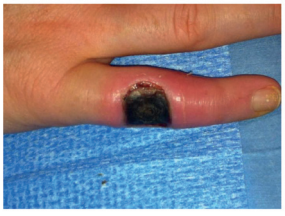
Question	Responder & Response Rates	Agree	Disagree	z-score (p<0.05)	p-value
Confident that UHI will be in place by 2015	Patient (N= 496; 85.2%)	22.8%	77.3%	-5.9417	0
	GP (N= 156; 100%)	1.9%	98.1%		
UHI will lead to an increase in waiting times for appointments	Patient (N=461; 79.2%)	60.7%	39.3%	-6.225	0
	GP (N=151; 97%)	88.1%	11.9%		
UHI will reduce the disparity between public and private patients in waiting times and access to hospital care	Patient (N=453; 77.8%)	55.6%	44.4%	-6.5792	0
	GP (N=150; 96%)	24.7%	75.3%		

A paediatric hernia with a twist: The presentation, imaging findings and management of a strangulated ovarian hernia: Hughes et al describe the case of a strangulated ovarian hernia in an infant girl. The clinical findings were that the inguinal swelling was both tender and irreducible.





Deep full thickness burn to a finger from a topical wart treatment: Tong et al describe a full thickness burn to the skin following the application of over- the- counter topical formic acid for a wart on the proximal interphalangeal joint. Following a report to the Medicine's Board, the manufacturer has altered the instructions for use.



An assessment of surgical experience among obstetric and gynaecology SpR trainees: Gaughan et al point out that the training exposure to hysterectomy for benign conditions has decreased due to the Mirena Coil, endometrial ablative techniques, and uterine artery embolization. In a survey of 29 trainees, there was a distinct difference in the competency levels between those who had completed 1 year in a general hospital doing pure gynaecology and those who had not. The importance of dedicated gynaecology experience is emphasised.

Assaults on Medical, Nursing and Paramedical Staff

There has been recently yet another account of a physical assault by a patient towards a doctor[1]. The scenario is a familiar one, a drunken male in the emergency department with a minor injury. A tirade of verbal abuse and racist slurs was followed by physical violence against the doctor. The account highlights a problem that we have lived with for a long time. One of the most difficult situations faced by doctors is being threatened, abused, or physically harmed by one of their patients. Young doctors who are still in training and on the front line are most at risk of injury.

The definition of medical workplace violence is behavior by a patient that is intended to physically or psychologically harm the healthcare worker. It includes physical injury, spitting, verbal abuse and threats. Unfortunately doctors and nurses worldwide are experiencing high levels of confrontation and aggression. The UK data for 2014 reports that 60 per 1000 healthcare staff were subjected to serious abuse. A previous 2008 staff report carried out for the UK Healthcare Commission found that 12% of staff across all trusts reported being physically assaulted over the previous year. The clinical areas most at risk are psychiatry, emergency departments, and general practice. Employers have a duty 'so far as is reasonably possible' to protect the safety and well-being of their staff. There have been prosecutions of the NHS for situations where staff were left unprotected. In one case a hospital trust in South London was fined £28,000 after a nurse was killed by a patient[2].

Earlier this year on 20th January, Dr. Michael Davidson, cardiac surgeon at the Brigham and Women's hospital Boston, was shot dead in his office by a patient's disgruntled son. The patient had survived the surgery but the son blamed Davidson for some post-operative pulmonary complications. A hospital spokesman stated that it represented the worse nightmare for doctors who have to undertake high-risk operations. There is very real fear and when this happens the fear becomes more real. A shocked Boston medical community was at a loss on how to respond. Comments included 'we are all so vulnerable, there is nothing to protect us'. Between 2000 and 2011 there have been 154 hospital related shootings in the US. In the previous era 1980 – 1989, 22 doctors were killed while at work. Lisa Rosenbaum[3] tried to provide balance making the point that there has long been an implicit understanding between the profession and the public. She accepts that the public's trust in doctors appears to have slipped. Renewed efforts need to be made to convince patients that we are all on the same side.

In 1998 Jenkins et al[4] surveyed violence and verbal abuse against staff in 310 emergency departments in the UK and Ireland. Among 233 replies, staff reported 10 fractures, 42 lacerations, and 505 soft tissue injuries. There were 298 arrests, 101 court appearances, and 76 convictions. This equates to an arrest rate of 1:50 and a conviction rate of 1:200. Many departments stated that verbal abuse occurred daily. Nurses were most commonly the recipients of verbal abuse, followed by receptionists and doctors in descending order of frequency. The commonest perpetrators of the violence were the patients themselves, followed by their friends and family.

A primary care study[5] has found that 78% had been verbally abused, 44% had been threatened, 13% had been physically abused, and 9% were sexually harassed in the preceeding 12 months. Females were more likely to be verbally confronted, while males were at greater risk of physical abuse. Background factors included drug abuse and mental illness. A survey of 634 Irish GPs found that 21% had experienced violence or aggression[6]. Physical injury was sustained in 7% of doctors. Alcohol and drugs were important precipitating factors.

Workplace violence has long-term consequences for staff. It causes anxiety, anger and psychological burn-out among caregivers. Hospitals with high rates of abuse experience loss of working days, poor staff performance, low staff morale, and reduced trust with management.

There can be no excuse for physical or verbal abuse of healthcare workers. The risk factors for aggressive behavior among patients and their families are the role of drink and drugs, impatience during long waiting times, frustration with the lack of services, anxiety regarding their underlying medical condition, and resentment due their adverse personal circumstances. The waiting area should have distractions including patient education magazines, sufficient space, and wifi facilities if possible.

The ways in which hospitals can ameliorate or prevent violent interactions with patients are the visible presence of security guards, surveillance cameras, panic buttons, written guidelines on how to deal with abusive patients, and a policy to vigorously pursue and where appropriate prosecute offenders. The layout of facilities, such as clinics, should allow for the expulsion of aggressive patients and their families. The doctor should always remain between the door and a potentially violent patient. Healthcare workers need more education and teaching on how to deal with aggression and violence among patients. Sudden, expected attacks are rare. Most assaults are preceded by mounting tension, and escalating threats[7]. One of the concerns expressed by many studies is that episodes of violent behavior against staff are significantly under reported. It is important that all Units accurately document each event so that the patterns and year on year rates can be analysed. As a rule of thumb one's suspicion's should be raised when a patient makes one feel uneasy or frightened.

The Medical Council's Guide states 'if you are asked to examine or treat a patient who presents a risk of violence, you should make reasonable efforts to assess any possible underlying clinical causes of the violent behaviour. However, you are not obliged to put yourself or other healthcare staff at risk of undue harm in the course of such assessment or treatment'.

There needs to be continued vigilance and accurate monitoring of violence and abuse against healthcare workers. Staff need to know that management will uphold a zero tolerance when any member of its staff is injured, threatened, or verbally abused.

JFA Murphy
Editor

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What can Doctors Expect from the new Medical Council Guidelines?

This summer the Medical Council published the new Draft Guide to Professional Conduct and Ethics for Medical Professionals for consultation and the final version is expected to be published shortly. The new guide will set out the principles of good professional practice that all doctors registered with the Medical Council in Ireland are expected to follow under the four pillars of professional identity, partnership, practice and performance. The 8th edition in its draft form represents a significant departure from the 7th Edition and, with further, work will hopefully provide the medical profession with more detailed guidance and clarity in many important areas of practice such as patient nutrition and hydration, conscientious objection, restraint, maintenance of medical records, confidentiality, consent, doctors in management and leadership roles, managing conflict of interest, concerns about colleagues. The guide will make clear the huge expectations that society places in the medical profession in Ireland, unfortunately it will not ensure that sufficient resources are provided to medical profession to meet those expectations nor will it protect doctors from frivolous complaints that can temporarily label a doctor as "not in good standing".[1] Only adequate resourcing of the healthcare system and a review of the complaints system can address those issues.

On the other hand, the new guide will attempt to address some of the more modern issues facing the medical profession as a result of advances in information and communication technology.

The draft gives sensible guidance on the use of social media reflecting positions of national and international medical bodies.[2,3] Doctors are advised not to contact patients through social media sites and that it's not a good idea to friend a patient either. The guide reminds doctors that social media sites can't guarantee confidentiality so the general rules applying to doctor-patient confidentiality apply and information or images from which patients might be identified should not be published on-line. It's best to avoid discussing individual patients on social media sites at all and even if doctors are sharing experiences within a closed professional network, patient information must be anonymised and the sites security and privacy settings should be checked. The final guide should also recommend that Doctors should regularly check that information about themselves on social media or other internet sites is factually correct.

The guide also provides some advice for medical professionals on the use of telemedicine for the treatment of patients. The guide requires doctors providing telemedicine services in Ireland to be registered with the Medical Council. It also requires doctors to seek patient consent to a telemedicine consultation and to protect a patient's privacy and confidentiality. Telemedicine has advantages particularly in the management of chronic disease or where the distance between the patient and physician is an issue, however the guide, in its draft form, fails to recognise some of the pitfalls of telemedicine, unfortunately, telemedicine services can be open to abuse if neither the patient nor the doctor can be identified and can lead to an incorrect diagnosis or non-compliance with clinical guidelines if physical examination cannot be carried out. In general, international ethical guidance on the use of telemedicine[4,5] would also recommend that telemedicine be employed primarily in situations where the physician cannot be present within a safe time period and should only take place if the doctor has an existing professional relationship with the patient or has an adequate knowledge of the presenting problem to enable the doctor to exercise proper and justifiable clinical judgement. In all cases the physician and patient must be able to identify each other reliably. Doctors should ensure patients are also able to use the services and inform patients of any issues that might arise if they are relying on relatives or others to transmit data.

Guidance on aspects such as social media and the use of telemedicine are welcome additions to the Guide to Professional Conduct and Ethics for Medical professionals as is regular revision of the guidelines on all aspects of professional practice. With some extra work doctors can expect the new guide to provide greater clarity on the issues affecting modern medical practice in Ireland.

R Walley
President, Irish Medical Organisation

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Irish Trainees Continuing to Emigrate

The Medical Council's spotlight report on 'Trainee Career and Retention Intentions', to be released later in October 2015, will report further findings from its 2014 Trainee National Experience Survey[1], to which over 1,600 non consultant hospital doctors (NCHDs) in training posts responded. This latest report will show that close to half of trainees – the cornerstone of hospital care and the future cornerstone of our health services – intend to pursue their careers outside of Ireland. Most worrying is that those in Higher Specialist Training are more likely to leave, resulting in greater loss to the Irish health system in terms of investment of effort and money, and lost expertise. [1] The findings are consistent with a growing body of evidence on the medical workforce crisis facing Ireland. In early 2015, 88% of Irish medical students reported their intentions to leave Ireland on graduation, though close to half said they would return [2] However, the assumption that most doctors will return was dispelled in our 2015 survey of 307 emigrant Irish trained doctors who had left Ireland between 2008 and 2013.[3] Since leaving, there had been a three-fold rise in those intending to remain abroad permanently and only a quarter intended to return to practice in Ireland.[4]

More striking than the numbers is the depth of feeling, frustration and sometimes anger that Irish doctors have expressed at the working conditions in Irish hospitals that forced them to leave.[3] A knock-on effect of high levels of emigration of Irish trained doctors has been the high level of recruitment of international medical graduates to fill the gaps left by departed Irish trained doctors.[5] This raises questions about Ireland's implementation of the WHO Global Code on the International Recruitment of Health Personnel.[6] Nothing here will surprise Irish doctors, nor anyone monitoring the medical workforce crisis in the mainstream media. No opportunity should be foregone for highlighting the scale and depth of this crisis and bringing it to the attention of current and future decision-makers. Stemming the haemorrhage of our doctors must be kept high among political priorities. Those at greatest risk from the medical workforce crisis are patients and the over-stressed and often exhausted doctors, both Irish and foreign-trained, who care for them.

Many of the actions needed to retain our doctors have been identified through the Strategic Review of Medical Training and Career Structures and real progress is being made with implementing many of its recommendations.[7] Greater predictability through streamlined training has been introduced across most specialties; a careers website is in place and there was positive feedback from the 400 attendees who attended a recent careers day; there has been a reduction in paperwork for trainees when changing jobs; and national NCHD leads have been established.[8] However, there is some devil in the detail: failure at first attempt to get on to higher specialist training can preclude further applications, encouraging some doctors to emigrate without applying; the 24 flexible (family-friendly) training posts are over-subscribed; and many hospitals and some senior colleagues are not yet facilitating NCHDs who take on representative roles. Some recommendations, such as the allocation of non-core tasks to other staff, have made slow progress. Many require modest resources or merely follow-through by hospitals, for example where hospitals have been granted funds to support NCHDs who need to pay for compulsory training courses and examinations. As important as the individual recommendations is the need for a culture shift among hospital employers, who need to demonstrate that they value the doctors who have chosen to stay and work in Irish hospitals, when more attractive options are available elsewhere.

The Medical Council's Annual Trainee National Experience Survey provides an opportunity to bring the experiences and concerns of NCHD trainees to the attention of policy makers. The findings on NCHDs' intentions to emigrate, in its forthcoming spotlight report, are based on questions that were drafted collaboratively with the RCSI health workforce research group, which is implementing a doctor emigration research project, funded by the Health Research Board (HRB). The research aims to track participating doctors and report the numbers and profiles of those who follow through on intentions to migrate and those who stay in Ireland. Of the 1,400 respondents who answered the questions on migration intentions, 1,200 agreed to share their data with the researchers and 900 agreed to be tracked. In 2015 we conducted in-depth interviews of 50 of these doctors, which show that frustration among respondents, some of whom have already emigrated, has not reduced. We will be conducting a follow up survey of these doctors in late 2015, to gain a better understanding and measure the individual and combinations of factors that shape migration decisions.

All who wish Ireland to have first class health services need to advocate for working conditions that will retain the doctors we train. The most common reasons for emigration and reluctance to return are stressful working conditions, and unclear or unsatisfactory career progression. [3] Medical graduates today are far better informed about opportunities and working conditions in other countries. For some, inequity in terms and conditions of service in comparison to colleagues who obtained consultant posts just a few years earlier is still a sticking point. Doctors' trust in their employers and in those who run the health services needs to be rebuilt, along with implementation of the measures that will help offset this inequity, if Irish doctors are to return or stay to make their careers in the Irish health services.

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Declaration of interest

R Brugha is Principle Investigator of the HRB-funded Doctor Emigration Project (HRA_HSR/2013/318). He is also a member of the Strategic Review of Medical Training and Career Structures implementation monitoring group.

Refereces

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Testicular Sperm Extraction and Intracytoplasmic Sperm Injection: Outcomes in a specialist fertility centre

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Abstract
Assisted reproduction with testicular sperm extraction (TESE) and intra-cytoplasmic sperm injection (ICSI) are fertility treatment options for couples with severe oligospermia or azoospermia. A retrospective review was performed of 146 TESE procedures in a specialist fertility centre in Ireland. The indication for TESE was obstructive azoospermia (OA) in 59% (n=80) and non-obstructive azoospermia (NOA) in 41% (n=56). Sperm retrieval rates after TESE were determined and the pregnancy rates per ICSI cycle number were evaluated. Sperm retrieval rates were 99% (n=79/80) and 32% (n=18/56) for OA and NOA men respectively. Fifty-eight couples proceeded to ICSI. Overall 114 ICSI cycles were performed and 33 cycles resulted in fertilisation (29%). Our sperm retrieval and pregnancy rates are consistent with international studies and support the ongoing role for TESE and ICSI as successful assisted reproductive techniques for male factor infertility in Ireland.

Introduction

Azoospermia is defined as the absence of sperm in ejaculated semen and is the most severe form of male factor infertility. Its incidence is approximately 5%[1]. Prior to the development of assisted reproduction techniques (ARTs) donor sperm was the only available option for conception among couples with severe oligospermia or azoospermia. Over the last two decades a number of surgical techniques have been pioneered and validated in an attempt to retrieve sperm for assisted reproduction[2]. These include percutaneous epididymal sperm aspiration (PESA), microsurgical epididymal sperm aspiration (MESA), testicular sperm aspiration (TESA), testicular sperm extraction (TESE) and most recently micro-dissection TESE. PESA is minimally invasive and can be performed under local anaesthesia. If this method fails MESA can be considered. TESA can also be performed as an alternative to epididymal aspiration techniques as it is also minimally invasive[3]. TESE is more invasive and can be performed either initially or after more minimally invasive ARTs have failed[3]. In micro-dissection TESE a surgical microscope facilitates exposure of area of testicular tissue with dilated seminiferous tubules. Our unit performs TESE alone and this method involves a biopsy/ biopsies under general anaesthesia through a scrotal incision.

In assisted reproduction, intracytoplasmic sperm injection (ICSI) is now routinely used in conjunction with in vitro fertilisation in oligospermic/ azoospermics. A single spermatozoon is injected centrally into the cytoplasm of an oocyte. This contrasts to conventional IVF cycles where oocytes are inseminated in vitro with approximately 50,000 spermatozoa[2]. In oligo- or azoospermic men an adequate number of sperm invariably will not be retrieved. Recovered sperm can either be used on the day of retrieval for ICSI or cryopreserved for future use. The aim of the present study was to evaluate the effectiveness of ICSI cycles in severe oligospermic (i.e fresh prepared sample inadequate for ICSI) or azoospermic men following TESE as part of assisted reproduction in a specialist fertility centre in Ireland. Our centre was established in 1985 and fertility treatments have been part of the services since its inception[4]. The primary outcome variables were: sperm retrieval rates, clinical pregnancy rates and miscarriage rates per cycle.

Methods

A retrospective review was performed on 136 consecutive men undergoing TESE (August 2003-October 2014) in the Assisted Conception Unit of Clane General Hospital. A single urologist performed all cases using a standard open surgical technique on the larger testis or on both testes. All patients underwent history/ clinical examination specific to infertility, and were initially investigated with routine blood tests and semen analysis. Male hormone profile (including serum LH, FSH and early morning testosterone) and scrotal ultrasound were tested as indicated. The aetiology of azoospermia was classified as obstructive (OA) or non-obstructive (NOA). Available testicular histopathological data was also reviewed. The success rate of TESE, as defined by the retrieval of viable spermatozoa, was determined and the rate of progression of couples to ICSI was assessed. The number of ICSI cycles performed, the clinical pregnancy rates and miscarriage rates per ICSI cycle were evaluated. Fertilisation is defined as the total number of fertilised oocytes over the total number of injected oocytes per ICSI cycle. A clinical pregnancy is defined as a detectable foetal heart beat on ultrasound on day 35 to 40 after embryo transfer.

Table 1: Histopathological patterns identified in men undergoing TESE testis biopsy for NOA and severe oligospermia. Ninety-one percent (n=51/56) of patients had histopathological analysis of their testicular biopsies.

Histopathology	Number (%)
Sertoli Cell Only	22 (43)
Normal Spermatogenesis	13 (25)
Maturation Arrest	8 (16)
Hypospermatogenesis with a mixed pattern	6 (12)
Absent Spermatogenesis	1 (2)
Testicular Seminoma*	1 (2)
Total patients biopsied	**51 (100)**

* This patient's histopathology also demonstrated maturation arrest

Results

Patient demographics

A total of 146 TESE procedures in 136 men were performed. All cases had documented azoospermia or severe oligospermia (Table 1). The indication for TESE was OA in 59% (n=80) and NOA in 41% (n=56). Mean male age at TESE was 40.3 years. For men with OA, 64% (n=51/80) had a history of vasectomy, with or without failed vasectomy reversal (53%; n=27/51). The mean interval between vasectomy and vasectomy reversal was 11 years (range: 3-32 years). The mean interval between vasectomy and TESE was 13.8 years (range 3-32 years). Overall, 15% (n=20) of patients had a history of undescended testes. One patient with NOA and an atrophic right testis presented with an incidental palpable left testis swelling and ultrasonography was in keeping with testis tumour. He proceeded to left radical orchidectomy and concomitant attempted TESE (on the left testis). Histopathology confirmed stage 1 seminoma and maturation arrest on the TESE specimen. Forty six percent (n=67) of procedures involved bilateral testicular biopsies. Thirty five percent (n=51) were from right testes and 19% (n=29) from the left. The mean number of biopsies taken was two.

Table 2: Sperm retrieval rates post-TESE for OA, NOA and all males with subsequent ICSI data, showing the number of cycles, fertilisation, pregnancy and miscarriage rates.

	Patients (N)	Sperm Retrieval Rate (N)	Patients proceeding to ICSI (N)	Mean No. of Cycles (Range)	Total No. of Cycles	Fertilisation rate/ cycle (N)*	Clinical pregnancy rate/cycle (N)	Miscarriage rate/ cycle (N)
OA	80	99% (79)	45	1.72 (1-12)	83	34% (28)	27% (22)	7% (6)
NOA	56	32% (18)	13	3.25 (1-6)	31	16% (5)	13% (4)	3% (1)
Overall	136	71% (97)	58	(1-12)	114	29% (33)	23% (26)	6% (7)

* Fertilisation is defined as the total number of fertilised oocytes over the total number of injected oocytes per ICSI cycle and values correspond to number for all cycles performed.

Sperm retrieval rates for OA and NOA
Seventy-one percent (n=104/146) of TESE procedures resulted in sperm retrieval with a mean of 6.29 straws cryopreserved post-procedure. Sperm retrieval rates were 99% (n=79/80) and 33% (n=18/56) for OA and NOA men respectively. Four men with obstructive azospermia (3% [n=4/136]) had congenital bilateral absence of the vas deferens. Ten men had repeat TESE; of which one was performed after initial failure to retrieve sperm with histopathology demonstrating partial Sertoli Only Syndrome and patchy active spermatogenesis. Sperm was successfully retrieved on the repeat TESE. The remaining 9 men underwent successful repeat TESE procedures to facilitate repeated ICSI cycles.

Sperm retrieval post vasectomy
In total, 98% (n=50/51) who had TESE post-vasectomy had successful sperm retrieval. Twenty-seven men who had a vasectomy had a history of vasectomy reversal of which 14 (52%) were historic and 13 (48%) reversals were performed in conjunction with TESE. These 13 dual procedures were performed between 2003-2008 when patients had risk factors for failed vasectomy reversal and persistent infertility (i.e. duration from initial vasectomy to reversal and/or increased female age). Twelve of the 13 men successfully had sperm retrieved but only 3 proceeded to ICSI because vas reversal was successful or else the couple had not yet proceeded to ICSI at the time of preparation of this manuscript

Histopathology
Seventy-two percent (98/136) of men had testicular specimens sent for routine histopathology, of which 59% (n=47/80) had a history of OA. All specimens in the OA group showed normal spermatogenesis. Ninety-one percent (n=51/56) of men with NOA or oligospermia had testicular tissue sent for histopathology. The frequency of different histopathological patterns for the NOA and oligospermia subgroups are shown in Table 1.

ICSI
The relevant ICSI data is shown in table 2. Of the 98 couples who had sperm stored, 40 have not used the sperm to date and 58 couples have proceeded to ICSI. Seventy-eight percent (n=45/58) of the couples who proceeded to ICSI had a diagnosis of OA. Overall, 114 ICSI cycles were performed and 33 cycles resulted in fertilisation (29%). The clinical pregnancy rate (i.e. detection of a foetal heart beat after day 35) was 23% (n=26; including 1 set of twins) and 7 were lost (6%; n=7/114 cycles) (Table 2). The average female age at ICSI was 37 years (range: 27 - 44). Of the couples that proceeded to ICSI, the fertilisation rate per cycle was 34% with OA (n=28/83 cycles) compared to 16% per cycle with NOA couples (n=5/31 cycles) and the average attempt per couple consisted of 2 cycles (range: 1 - 5).

Discussion

The combination of TESE with ICSI for the treatment of NOA and OA is now performed more frequently as Assisted Reproductive Techniques (ARTs) continue to evolve[5]. Percutaneous methods for sperm retrieval yield success rates in the range of 90-100% for OA and 30-50% for NOA[6,7]. Congenital causes of OA include cystic fibrosis (CF), congenital absence of the vas deferens (CBAVD), Young's syndrome and prostatic/ ejaculatory duct cysts[6]. CBAVD is caused by an abnormality in the CFTR gene. All males are routinely screened for CF. Their initial testing also includes hepatitis and HIV screen. Acquired causes include sexually transmitted diseases (STDs) vasectomy and failed vasectomy reversal. NOA is characterised by a number of testicular histopathological patterns that are associated with environmental, endocrine, infective, genetic and traumatic abnormalities[5]. Clinical pregnancy rates with ICSI range from 20-44% internationally after sperm is retrieved from men with azospermia[6,7]. In Ireland, access to ARTs is limited, as these facilities are generally not available in the public sector. Many private clinics are performing a number of ARTs that incur considerable costs for patients. Although private clinics are monitored by the Irish Medicines Board (IMB) and must follow European guidelines, it is important that their results are published in peer-reviewed journals, particularly in this era of media and Internet advertising[8]. The main findings of the present study are that sperm retrieval rates for azoospermia, fertilisation rates with ICSI, and pregnancy and miscarriage rates are in keeping with international results. These findings demonstrate that TESE can be safely and successfully performed to retrieve sperm for ICSI in men with oligo- or azoospermia in specialist centres in Ireland.

Different surgical techniques have been described for TESE procedure, our unit performs the 'window' technique initially described by Devroey et al. in 1995[9]. Alternatively, individual incisions can be made into the upper, middle and lower pole if multiple testicular biopsies are indicated. The advantages of TESE in this setting are that the technique is repeatable, quick to perform and no microsurgical experience is required. The disadvantages include a relatively low rate of retrieved sperm in NOA (17-60%) and the risk of testicular atrophy if multiple biopsies are taken[6,8-11]. In micro-dissection TESE, the testicular parenchyma is dissected at 16-25x magnification to search for enlarged islets of seminiferous tubules[6]. It is not performed in our unit as it is costly, micro-surgical expertise is required and our results are satisfactory. Importantly, TESE is contraindicated in the setting of hypogonadotropic hypogonadism secondary to pituitary tumours. In these patients oligospermia and azospermia are successfully managed with medical therapy. An area of controversy relates to the role of TESE in males with primary testis failure (as evidenced by atrophic testes and raised serum FSH) where success rates are low as in this study. A number of studies have investigated adverse factors for predicting pregnancy rates in couples with oligo-/azospermia[3,12]. These include increasing male age, aetiology of the azoospermia, testicular histopathology, type of sperm used (i.e. fresh versus frozen), and the use of pentoxyphilline on the ICSI cycle. None of these significantly affect fertilisation, embryo cleavage, clinical pregnancy, live birth and miscarriage rates[5]. However, female age has been repeatedly shown to affect fertilisation, with a female partner less than 37 years of age consistently demonstrating improved fertility rates[13,14]. Increasing female age is an adverse predictor due to the gradual depletion of ovarian reserve[14]. We counsel couples that are considering ARTs that fertilisation correlates adversely with an increasing female age and may therefore be less likely with repeated ICSI cycles.

Sperm retrieval is successful in approximately 30-50% of men with NOA; our findings are consistent with these international studies[6]. Other predictive factors for sperm retrieval in NOA include testicular histopathology and elevated serum FSH levels. The presence of tubules with spermatazoa on testicular biopsy is the best predictor of positive surgical sperm retrieval in patients with NOA[15]. TESE offers male patients with severe oligo- or azoospermia an opportunity for sperm retrieval for ICSI. We have demonstrated sperm retrieval rates and pregnancy rates that are comparable with international studies in other specialist assisted reproduction centres. These findings support the ongoing role for TESE and ICSI as assisted reproductive techniques for male factor infertility in Ireland.

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Review of Time to Surgical Decompression in Traumatic Spinal Cord Injured Patients

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Abstract
Interventions which may improve neurological outcomes, including time to surgical decompression, in traumatic spinal cord injury (TSCI) evoke much interest. The majority of TSCI patients in Ireland are managed acutely at the National Spinal Injuries Unit (NSIU). A retrospective review of healthcare records of TSCI patients, who had surgical management there, in 2010, 2011, 2012, was performed. From the information gathered, the duration of each stage of the patient pathway was calculated. Median duration between onset of injury and time of arrival at local hospital was 1 hour 25 minutes, between arrival at local hospital and referral to NSIU was 4 hours 17 minutes, between referral to and arrival at NSIU was 6 hours 25 minutes, between onset of injury and arrival at NSIU was 13 hours 7 minutes, between onset of injury and surgical decompression was 27 hours. A number of factors have been identified which could influence these time durations.

Introduction

Traumatic spinal cord injury (TSCI) can cause devastating physical, psychological, social and economic consequences for patients, their families and wider society. Any intervention which might improve outcomes evokes considerable interest. One such intervention is the timing of surgical intervention and if appropriate, decompression, a controversial topic for some time now.[1] It has been suggested that earlier decompression (within 24 hours) is very unlikely to cause neurological deterioration, possibly results in neurological improvement, probably results in shorter hospital length of stay and fewer medical complications.[2] However, many studies included in this review were low quality evidence of a case-control or retrospective study design.[2] STASCIS was the first prospective cohort study examining outcomes between 2 patient groups, those who had surgical decompression within or after 24 hours from onset of cervical-level TSCI.[3] Earlier decompression was associated with improved neurological recovery at 6 months post-injury; however, those in the early decompression group were younger and had more severe injury, therefore with greater potential for improvement.[3] A worldwide survey of spinal surgeons revealed that the majority prefer to decompress the acutely injured spinal cord within 24 hours of onset of injury, particularly when TSCI was classified as incomplete, but may encounter logistical reasons, such as delayed transportation, for not being able to do so.[4]

Regardless of surgical intervention, outcomes have been shown to be better, when patients are managed at a specialist acute spinal cord injury centre (SCIC) with a full multi-disciplinary team, than when managed in general hospitals.[5] In particular, earlier

CPD available online at www.imj.ie and questions on page 287.

admission to a specialist SCIC, ideally within 48 hours of injury, is associated with shorter lengths of hospital stay.[5] Treatment in an acute SCIC also results in fewer delays to rehabilitation, greater rehabilitation gains, less risk of medical complications particularly pressure ulcers and lower mortality rates.[5] In a three part prospective study, patient outcomes were shown to be significantly better where there was a pre-defined pathway to specialist acute and rehabilitation services for patients with TSCI, one aspect of which is prompt referral to and timely arrival at the acute SCIC.[6,7] The improved outcomes included fewer medical complications, including pressure ulcers, shorter rehabilitation length of stay but with better rehabilitation outcomes both in terms of independence measures and home discharges.[6,7] In addition to the current potential benefits of earlier arrival at a specialist acute SCIC, availability of future treatments might be also be time-dependent, based on current clinical trial protocols.[8]

The NSIU, MMUH is the only specialist acute spinal cord injury centre (SCIC) in Ireland, where there is a complete multi-disciplinary team with expertise in management of acute TCSI. The majority of patients sustaining TSCI in Ireland are managed there. Following acute management, patients are transferred to the National Rehabilitation Hospital for rehabilitation. Patients sustaining TSCI are brought from the site of injury to their local hospital, usually by HSE road ambulance. Following assessment in the local emergency department and identification of a TSCI, the referral process to the National Spinal Injuries Unit (NSIU), Mater Misericordiae University Hospital (MMUH), commences. Contact is made with the on-call orthopaedic registrar in the NSIU. A detailed clinical referral form is completed and sent by facsimile to the NSIU. Imaging from the local emergency department is reviewed with the clinical information. If the patient requires transfer and is medically stable for transfer, the patient is accepted to the NSIU and transportation arranged to the NSIU, usually carried out by HSE road ambulance service. Upon arrival at the NSIU, patients' injuries are assessed using the ASIA (American Spinal Injuries Association) classification system and an ASIA work-sheet is completed. TSCI is classified by neurological level of injury and ASIA impairment scale (A indicating a complete injury, B, C, D, E indicating incomplete injury). All surgical house officers and registrars working in the NSIU are trained in the ASIA assessment. Relevant imaging is carried out where necessary and a decision regarding the need for surgical intervention is taken with the consultant spinal surgeon on-call. Because of current interest in time taken to surgical decompression from TSCI onset, it was decided to examine this process in Ireland. The objective of the study was to review the time taken for each stage of the patient pathway from onset of injury to the NSIU, with a view to considering if the process can be improved upon.

Methods

Cases were identified at the point of discharge from rehabilitation using the Patient Administration System of the National Rehabilitation Hospital for 2010, 2011 and 2012. The health-care records of these patients were then retrieved at the MMUH. A retrospective review of these healthcare records was carried out. All cases were confirmed as having had TSCI and surgical intervention The NSIU referral form from the local acute hospital, ambulance documentation, written entries in the health-care record, theatre logs, ASIA work-sheets were searched for necessary information. Date and time of onset of TSCI, arrival at local hospital, referral to the NSIU, arrival at NSIU, completion of ASIA and surgical intervention were recorded and entered into a database. Patient demographic details, ASIA impairment scale and the HSE region (Dublin North-East, Dublin Mid-Leinster, West, South) from which the patient originated were also recorded. SPSS version 16 was used to analyse the data. Duration of each stage of the patient pathway was calculated. Influence of each of patient age, severity of injury and area of origin on time from TSCI onset to arrival at NSIU or surgical intervention was explored.

Results

Health-care records of 110 patients were retrieved during the time available for this study. There were 17 complete tetraplegics, 44 incomplete tetraplegics, 19 complete paraplegics, 30 incomplete paraplegics. Mean patient age was 44.4 years (SD 19). Much of the data was incomplete, particularly documentation on time of day. Times at the starting and finishing points of the patient pathway, onset of TSCI and surgical intervention, respectively, were available on 66 patients only. Table 1 displays the median duration of each stage and of the overall referral process. Recording of time at which ASIA examinations were performed was insufficient to perform any analysis. Surgery was performed in 31 of 66 patients (47%) within 24 hours of TSCI onset. Spearman's Rho correlation testing revealed a weak but significant correlation (r=0.352, p=0.004) between patient age and time to surgical intervention from onset of TSCI. There was no relationship between the HSE area of the country from which the patient originated and time taken to arrive at the NSIU or between severity of injury (complete or incomplete) and time to surgical intervention. It was subsequently noted that 26 patients had surgical intervention in the NSIU but were not admitted to the NRH for a range of reasons including death, too frail for specialist rehabilitation, adequate recovery to allow for home discharge or repatriation to another jurisdiction. These cases have not been included in this study.

Table 1: Duration of each stage of the referral process to NSIU & surgical intervention

From	To	Median (Hours:mins)	IQR (Hours:mins)
Onset of injury	Arrival at local hospital	1:25	1:26
Arrival at local hospital	Referral to NSIU	4:17	4:28
Referral to NSIU	Arrival at NSIU	6:25	3:35
Arrival at NSIU	Surgical intervention	11:25	21:32
Onset of injury	Arrival at NSIU	13:07	10:30
Onset of injury	Surgical intervention	27:00	48:00

Discussion

This study was carried out with the objective of exploring time taken from onset of TSCI to surgical intervention and each step in the process of referral and transfer to the NSIU, MMUH. No exploration was performed of the impact of the time taken for either arrival at the NSIU or surgical decompression on patient outcomes. However, the NSIU is now one of the study sites for a European prospective observational multicentre study examining surgical outcomes between patients who have surgical decompression within and after 12 hours of TSCI onset.[9] The median time to arrival at the NSIU is within the suggested 48 hour window but other phases of the referral and transfer process seem prolonged, particularly time take from arrival at local hospital to referral to NSIU and time taken from arrival at NSIU to surgical decompression. Several factors could contribute to these time periods. Financial constraints have impacted negatively on ambulance services in recent years which could increase time taken for the patient to be transported to the local hospital from the site of injury and for time taken for transfer from local hospital to the NSIU. Medical instability could also result in delayed transfer. Time taken from arrival at local hospital to referral to NSIU may be affected by 2 factors: firstly, lack of awareness among junior doctors, working in emergency departments, of the importance of prompt referral to a specialist SCIC and secondly, difficulty in making contact with spinal surgical services in NSIU e.g. if the orthopaedic registrar on-call is attending to a case in the operating theatre. Lack of theatre space may have had a role to play in the long duration between arrival at NSIU & surgical

decompression. At the time when this study was carried out, there was no theatre space solely designated for spinal surgery within MMUH. Medical instability of the patient might also have influenced the time taken from arrival at NSIU to surgical intervention. In theory, bed availability could delay patient transfer from a local hospital although exceptional bed management usually eliminates this potential barrier.

The only factor which influenced, albeit weakly, time to surgical decompression was patient age, younger patients undergoing decompression earlier than older patients. This may be due to a lower likelihood of medical complications causing delays. HSE area of patient origin was not associated with time taken to arrival at the NSIU, again suggesting nationwide difficulties with the HSE ambulance services. Limitations to this study are the retrospective nature of data collection, difficulty retrieving all healthcare records within the limited allotted study time-frame, as well as poor recording of data, particularly on time of day, in many of the heath-care records which were reviewed. For all clinical entries in healthcare records, recording of date and time (using 24 hour clock) should be included, as a basic requirement of data entry.[10]

From this study, it has been identified that improvements in a number of areas might be possible. It is our understanding that the HSE and National Ambulance Service have commissioned an external review of the capacity of the service, which may in time result in improvements in transportation time. The role of a spinal coordinator within the NSIU, who would be more easily accessible to personnel in referring hospitals, is being explored. Additional theatre space reserved solely for spinal surgery is being developed. Finally, an education programme for junior doctors, working in emergency departments nationwide, on optimising early management of TSCI patients may be helpful in the future, coordinated through relevant training committees.

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In-hospital Paging Systems: An Effective Method of Communication between Hospital Staff in 2015?

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Abstract
Policies in relation to paging are designed to achieve effective in-hospital communication. This study recorded data in relation to pages received by interns over a two-week period. A survey was conducted assessing perceptions on paging and existing hospital policy. Four interns collected data in relation to 20 regular-day, 4 extended-day and 4 on-call (two weekday and two weekend) shifts (n=423 pages). Sixty-nine pages (16%) were made during pager-free periods. On average 3 minutes per hour were spent dealing with pages. Compliance with ISBAR ranged from 50.1% to 83.4%. Of the episodes where pages were made during protected times (n=85), 67% did not meet urgent criteria. While the majority of these pages were from nurses, they were less likely to violate the policy than other staff (relative risk 0.648, p=0.016). Efforts need to be made to ensure pager-free periods are respected in the interest of effective communication, staff morale and protected training time.

Introduction
A good communications system is the backbone of hospital activity and fundamental to clinical task management. In our hospital, a numeric pager is provided as the official system of communication between ward staff, including junior doctors. First introduced into hospitals in the 1950s, pagers are a one way form of communication. There is no way of distinguishing between routine and more urgent calls received on a standard pager. The pager lacks accountability and governance and carries no relevant information to help staff prioritise work. It is well-recognised that doctors often have to interrupt patient care to answer a page[1,2]. Studies indicate that anything up to 65% of calls interrupt patient care[1,3]. It has been suggested that reducing interruptions would help reduce work-related stress, while at the same time improving efficiency and decreasing medical errors[4,5]. Nurses and doctors perceptions of call urgency can differ, with doctors considering many calls via pager to be less urgent than labelled[6-8]. An important factor in the initial management an acutely ill patient is the quality of the communication between the clinical staff involved. It has long been recognised that when this communication is sub-optimal, patient safety is compromised[9]. The ISBAR tool represents a standardised model that all healthcare

professionals use to structure clinical communication in hospital. The key elements of the framework are introduction, situation, background, assessment and recommendation (ISBAR)[10].

Attempts have been made to define the level of abnormal physiological parameters that should prompt nursing staff to request a medicalreview[11]. The Early Warning Score (EWS) is utilised in conjunction with clinician's judgement to detect a deteriorating patient. It is based on a simple scoring system in which a score is allocated to physiological measurements i.e. respiratory rate, oxygen saturation level, temperature, blood pressure, pulse rate and level of consciousness (Glasgow Coma Scale). A score is attributed to each parameter and then aggregated to calculate the EWS. If a score of 3 in any parameter or an aggregate score of 3 or more is attained, the EWS escalation protocol is activated. It has been shown to facilitate early detection of a deteriorating patient which improves outcomes for patients[12-14]. Studies indicate it to be a good predictor of patient mortality and hospital length of stay[15]. The current paging policy in our university teaching hospital was introduced in July 2012 to provide guidance on agreed paging practices that should be used in order to achieve appropriate and effective use of the hospital pager system. It states pages should be restricted from 23.00 to 05.00 to urgent duties, between 23.00 and 09.00 all pages should be discussed with the nurse in charge, non-urgent duties should be recorded on the NCHD worksheet, ISBAR used when communicating details and it provides for specific pager-free periods (except emergencies) to facilitate training and rest periods for junior doctors during core hours and on call shifts. The objectives of this study were to assess compliance with the use of the existing paging policy and to identify areas where future improvements can be made.

Methods

Data were collected prospectively over a two-week period. Four interns recorded data in relation to pages received during five consecutive working days (8am-5pm), a single extended day shift (5-8pm) and a single on-call shifts (9am-9pm). Data were also recorded for pages received on regular working days outside of the recognised 8am-5pm period, when interns were not on call. Urgent calls (i.e. legitimate violations of bleep-free periods), defined by the local bleep policy, included those relating to a major change in patient condition, patient symptoms causing suffering, urgent admission, patient symptoms causing suffering, urgent IV line for sepsis/chemotherapy/transfusion, all calls from ED or the communication of high EWS scores. Compliance with ISBAR was recorded for all pages. Interns and staff nurses were surveyed in relation to their awareness and understanding of the pager policy and also their perceptions of current work practices. Data analysis was carried out using SPSS (version 20, Chicago USA).

Table 1. Distribution of pages received by interns during specific work periods. Average pages per hour were calculated and are presented along with intern's estimations of pages received during the same periods, as recorded in the survey.

	Weekday (9am -5pm)	Extended Day (5-8pm)	On Call Weekday (5pm-9am)	On Call Weekend (9am-9pm)
Total Pages (n=407*)	259	34	41	73
Total Hours (n=252)	160	12	32	48
Average Pages (/hr)	1.6	2.8	1.3	1.5
Questionnaire	2.3	3.7	1.6	2.6

* Pages received outside of regular working hours and not to on-call interns (n=16) were not included here.

Results

Over a two-week period, four interns collected data relating to a total of 20 regular day, four extended day (5pm to 8pm) and four on-call (two weekday, 5pm to 8am and two weekend, 24 hours) shifts. This amounted to 252 hours and interns received 423 pages during this period (Table 1). Acute medical wards accounted for 187 (44%) of pages, 95(23%) were from surgical wards and 82 (19%) were from non-acute medical wards, with the remainder of pages (n=59, n=14%) from other locations. The majority of pages (n=316, 75%) received were from nurses, with 30 (7%) from pharmacists and 26 (6%) from doctors (Table 2). The commonest reason for bleeping was in relation to medication prescription (n=78, 18%), acutely unwell patients (n=46, 11%), to discuss patient management (n=35, 8%), insertion of IV cannula (n=32, 8%), reporting EWS (n=25, 6%), patient discharges (n=25, 6%) and non-urgent clinical queries (n=182, 43%). Further details are provided in Table 2. Mean number of pages received per hour was1.6. Mean time to answer pages was 40 seconds (standard deviation 80.6). Meantime spent on the phone was 60 seconds (standard deviation 55.1). This equated to just under 3 minutes per hour (5%) spent dealing with pages. Repeat pages were made in 24 cases (5.7%). Compliance with ISBAR ranged from 50.1% (assessment) to 83.4% (background) (Figure 1).

Table 2. Representation of the source of each page recorded during the study period and the primary reason for paging. Other in source of page includes hospital switchboard, patients, bed manager, GP, medical students and secretaries. Non-urgent pages, as defined by the local bleep policy, related to fluid balance deficits where patient appears comfortable, requests from relatives regarding non-urgent issues, review bloods/ radiographs, chart routine medications, night sedation and NG feed insertion/ IV fluids.

Source of page	Number of Pages (%)
Nurse	303 (72)
Pharmacist	30 (7)
Doctor	26 (6)
Other	42 (10)
Medical Social Worker	4 (1)
Physiotherapist	1 (-)
Occupational Therapist	2 (-)
Clinical Nutrition	7 (2)
No Data	8 (2)
Reason for Page	**Number of Pages (%)**
Kardex	78 (18)
Sick patient	46 (11)
Patient management	35 (8)
IV cannula	32 (8)
EWS	25 (6)
Patient discharge	25 (6)
Non-urgent clinical query	182 (43)

Sixteen pages (4%) were made to regular services, rather than the on-call intern, outside of the recognised daytime working hours (8am-5pm). In addition, twenty-nine pages (7%) were made during pager-free periods on regular day shifts and 40 (9%) during pager-free periods on-call. Of all episodes where pages were received during protected times (n=85), 13 (15%) related to acutely unwell patients, 7 (8%) EWS score reporting and 5 (6%) were for patients experiencing acute pain. Fifty-seven bleeps (67%) during these periods did not fulfil urgent criteria and three had no data recorded. While the majority of these 85 pages were placed by nurses (n=71, 84%), nurses were less likely to violate the policy than other staff (n=11; relative risk 0.648, 95% confidence interval 0.546 - 0.769, p=0.016).

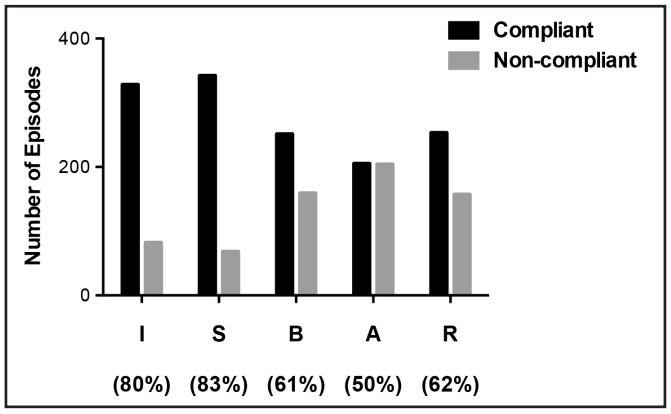

Figure 1. Compliance with ISBAR (Identify oneself, explain the Situation, provide clinical Background, provide details of an initial Assessment, Recommend a course of action) was recorded for all telephone conversations. Compliance was in excess of 80% for identification and stating the clinical problem and lower rates of compliance were observed for the other measures.

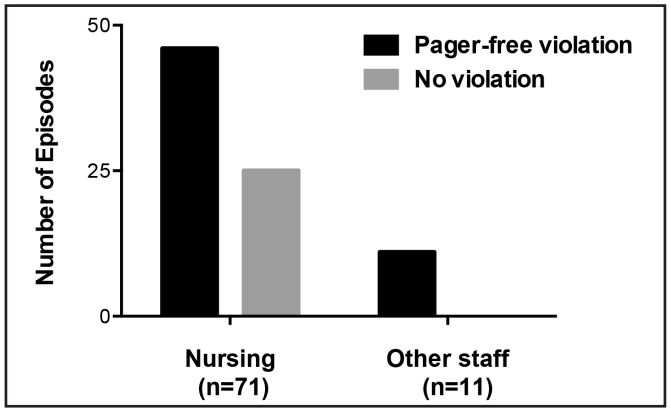

Figure 2. Data is presented for pages made during pager-free periods and violations of the pager policy, which were not made for urgent clinical indications. Nurses were less likely to violate the pager policy than other clinical and non-clinical staff 65% vs. 100% (relative risk 0.648; 95% confidence interval 0.546-0.769, p=0.016)

Survey Results

Twenty-eight interns, of a total of 51 interns, and 25 nurses answered the survey. Twenty-two interns (79%) and 18 nurses (72%) were aware of the existing pager policy. Fifty-seven per cent of interns and 28% of the nursing staff had not read this policy. Interns estimated they allocated 14minutes per working hour dealing with pages, while nursing staff estimated 11minutes per hour and study data indicated 2.8 minutes per working hour is spent dealing with pages.

Discussion

Pager policies can be extremely effective when used properly. Repeated interruptions have been shown to have a psychological impact, causing distraction and forgetfulness, resulting in both increased production of errors and compromised patient care[4]. Frequent paging also directly interrupts patient care and is an important cause of workplace stress. A study in 2005 showed that nurses spent 8% of their time on the telephone, while nurses on night shifts spent nearly 18% of their time on the telephone[16]. A 1992 study by Blum et al found that almost 50% of calls interrupted patient care, 24%interrupted ward rounds or teaching conferences, 34% changed management and 25%were unimportant[17]. Evidence from similar studies suggest that anything up to 65% of calls may interrupt patient care[1,3]. Reducing the number of unnecessary pages and postponing non-urgent ones could result in as much as a 42% reduction in disruptions of patient care and more rest periods for junior doctors[1]. While our study showed that staff were generally compliant with the pager policy, some areas still require attention. There is a need to inform allied healthcare professionals and other doctors of the pager-free periods and these should be displayed at ward level. Further efforts need to be made to ensure pager-free periods are respected in the interest of more effective communication, junior doctor morale and protected education and training time. Both interns and nurses vastly over-estimated the amount of time spent on pages. The reasons for this were beyond the scope of the study, but suggest both groups perhaps hold a negative perception in relation to the use of the pager system. Further elucidation of this may inform future direction in the modification and development of newer in-hospital communication systems.

Urgency matrices have been utilised in other fields to enable stratification of duties in terms of urgency and importance[18]. Using a 2x2 matrix, tasks are classified tasks as urgent and non-urgent on one axis, and important or non-important on the other axis. Important activities are those that have an outcome that leads to the achievement of one's goals, while urgent activities as those that demand immediate attention, but are often associated with the achievement of someone else's goals. Our study suggests that many pages focus on urgent and non-important tasks. The items that are non-urgent and important are the ones we are likely to neglect but should focus on to achieve medium to long-term effectiveness. Nightshifts for interns are often spent dealing with less urgent clinical and non-clinical tasks, many of which were not completed during the previous working day. These are mixed in with more urgent calls to assess patients who may have clinically deteriorated acutely. Streamlined paging systems have been shown to lead to more efficient communication between providers and decrease non-urgent pages to doctors. The use of Nighttime Nurse and Physician Paging System (NNAPPS) significantly reduced non-urgent pages, total pages and pages per patient during a night shift compared to services with conventional systems[19]. Communication between hospital staff is hampered by the use of outdated methods such as paging. Familiarity with the paging system is holding back progress. Various interventions have been trialled to reduce pager burden. Alphanumeric pagers can display both numbers and text, and may address some of the issues raised with the use of standard numeric pagers. In one study, the use of alphanumeric pagers resulted in a 29% reduction in disruptive pages sent during scheduled educational rounds[20]. Ward based task books have been successfully used for communication about non-urgent tasks[21,22]. Another alternative is paging limited to a certain portion of each hour e.g. such as the first 10 minutes.

There are communication technologies now available that improve information facilities in comparison to existing pagers. Evidence for beneficial effects of mobile and smart phones on healthcare systems is accumulating[23]. A study by Wu et al[24] showed doctors strongly preferred the use of smartphones over conventional pagers with perceived improvements in all items measured. The nurse-doctor relationship and its direct effect on patient care has been widely studied[25]. Disagreement between medical and nursing staff on appropriate use of the pager is a frequent cause of conflict. Unless nurse and doctor perception of call urgency are similar, an alternative communication system will continue to be a cause of potential conflict. Further research is required to determine a communication system which improves workflow efficiency and more importantly, quality of care. It is vital to engage doctors and nurses primarily in developing such a system.

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Evaluation of Presenting Symptoms and Long-Term Outcomes of Patients Requiring Excision of a Transobturator Tape (TOT)

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Abstract
The transobturator tape (TOT) is an effective treatment for stress urinary incontinence (SUI). Erosion of TOT mesh is a recognised complication requiring excision. A retrospective analysis of 228 females undergoing a TOT procedure over 4 years identified 16 patients (7%) that underwent excision of eroded mesh. Mean age of patients requiring excision was 48.8 years and mean weight was 72.7kg. Mean time to re-presentation was 14.5 months. Presenting symptoms included dyspareunia in 9 patients (56.2%), dysuria in 3 (18.7%), persistent incontinence in 3 (18.7%) and groin pain in one patient. Ten patients (62.5%) had a prior urogynecological procedure. After excision of eroded tape-mesh, 7 (43.7%) required a rectus fascial sling and 4 (25%) underwent repeat TOT for recurrence of SUI. Five patients (31.2%) required no further surgery. At present 10 patients (62.5%) report resolution of SUI, 4 (25%) report mild SUI and 2 (12.5%) patients have moderate/severe SUI. Resolution of symptoms occurred in the majority of patients after excision of eroded mesh and an additional anti-incontinence procedure.

Introduction

Stress urinary incontinence (SUI) is defined by the International Continence Society (ICS) as the complaint of involuntary leakage on effort or exertion, or on sneezing or coughing[1]. Its prevalence among adult females ranges from 10% to 40% and approximately 50% of females with urinary incontinence suffer from SUI[2,3]. At present, the suburethral sling procedure is the most commonly performed surgical procedure for the treatment for stress urinary incontinence (SUI). Macroporous, monofilament polypropylene mesh is the most frequently applied surgical material and common surgical approaches include both retropubic (tension free vaginal tape – TVT) and transobturator routes. The transobturator tape (TOT) procedure was first described in 2001 by Delorme[4] as an alternative approach to reduce the complications associated with TVT. The TOT is positioned underneath the mid urethra and runs laterally through the obturator membrane to the upper part of the thigh, from outside to inside. Studies have demonstrated equivalent subjective cure rates to TVT at 1 year; however TOT procedures are associated with less blood loss, less voiding dysfunction, lower rates of bladder perforation and shorter operative duration compared to a retropubic TVT approach[2,5]. Notably, the TOT procedure is associated with higher rates of vaginal erosion and thigh pain[2]. The timeframe associated with sling-related erosions from TOTs varies widely among female patients with some experiencing symptoms in the immediate post-operative period while others may develop complications years

CPD available online at www.imj.ie and questions on page 287.

later. Ultimately, erosion of a tape material will require definitive surgical treatment with either partial or complete excision of the mesh. In the present study, our aim was to describe our experience with patients requiring excision of an eroded tape mesh following the TOT procedure. We also aimed to assess their symptom profile, risk factors for erosion, as well as their continence status postoperatively.

Methods

Between January 2008 and July 2012, a total of 228 females underwent a TOT procedure (Serasis®, Serag-Wiesner, Germany) for SUI using the 'outside to inside' technique as described by Delorme[4]. The procedure was performed by a single urological surgeon (T.C.) in one institution (Beaumont Hospital, Dublin, Ireland). Patients with either intravesical, urethral or vaginal erosion of a TOT tape mesh were included in the retrospective analysis. Their records were retrieved, analysed and data were extracted. The relevant information gathered included age at surgery, weight and previous urological or gynecological surgical procedures. The patients' presenting symptoms and their duration were also recorded. In addition, resolution of symptoms after excision of an eroded tape mesh and requirement of additional anti-incontinence procedures was also documented. All mesh excision procedures were performed by the same surgeon (T.C). Examination under anaesthesia and cystourethroscopy was performed to identify the location of the eroded TOT mesh. Excision of the eroded segment was subsequently performed. This involved either complete lysis of the TOT and excision of 2 to 3 cm of mesh from the point of division on either side or simply excision of the visible eroded edge of mesh leaving the TOT intact. As this was a retrospective review of patients medical charts ethical approval was deemed not to be necessary. All patients were assessed with an outpatient interview, clinical examination and urinalysis at 3-months follow-up. Patients were then followed on an outpatient basis every 6 months thereafter. Patients who presented with recurrence of symptoms or de novo lower urinary tract symptoms during follow-up underwent urodynamic studies as well as flexible cystourethroscopy. The primary outcome variables recorded were the number and location of TOT mesh erosions and requirement of additional surgery to remove persistent mesh. Secondary outcome variables were persistence of urinary symptoms after removal of eroded mesh, postoperative complications, continence status, vaginal function and the requirement of additional anti-incontinence procedures.

Table 1: Patient demographics

Patient demographics	Mean	Range
Age of all patients undergoing TOT (n=228)	49.8 years	22.7 - 83.5 years
Age of patients with TOT erosion (n=16)	48.8 years	34.5 - 76.6 years
Mean weight of patient with TOT erosion	72.2kg	55 - 110kg
Time from surgery to presentation with symptoms of erosion	14.5 months	0.5 - 43.8 months

Table 2: Predominant presenting symptoms in females with an eroded TOT mesh

Symptom	No. of patients (%)
Dyspareunia	9/16 (56.2%)
Dysuria	3/16 (18.7%)
Persistent urinary incontinence	3/16 (18.7%)
Groin pain	1/16 (6.2%)

Results

Patient demographics

Between January 2008 and July 2012, 16/228 (7%) patients underwent excision of an eroded TOT mesh. Their relevant demographics are summarised in Table 1. The mean age at presentation was 48.8 (range: 34.5-76.6) years and the mean weight was 72.7 (range: 55-110) kg. Presenting symptoms are summarised in Table 2 and included dyspareunia in 9 patients (56.25%), dysuria in 3 patients (18.75%), persistent incontinence in 3 patients (18.75%) and persistent groin pain in one patient. Altogether, ten patients (62.5%) had a prior urological or gynaecological history (6 patients had a hysterectomy, 2 patients had a hysterectomy and colposuspension, 1 patient had a rectus fascial sling and 1 patient had repair of a urethral–vaginal fistula). The mean time to re-presentation from the time of initial surgery was 14.5 (range: 0.5-43.8) months.

Intra-operative findings

There were 11 patients (68.75%) with anterior vaginal erosion and 5 patients (31.25%) had erosion of the tape-mesh through the urethra/bladder neck. Fourteen patients (87.5%) underwent complete lysis of TOT and excision of eroded segment of TOT while 2 of the 16 patients (12.5%) of patients had partial excision of the visible eroded segment of material only leaving the original TOT intact.

Post-operative follow-up

Following excision of TOT; 7 patients (43.75%) underwent insertion of a rectus fascia sling, 4 patients (25%) had a repeat TOT and 5 patients (31.25%) required no further surgery. At present 10 patients (62.5%) report resolution of SUI, 4 patients (25%) report mild SUI (light leakage with vigorous activity) and 2 patients (12.5%) have moderate/severe SUI (leakage with any movement).

Discussion

Stress urinary incontinence (SUI) is an extremely common problem among females and accounts for approximately 50% of all urinary incontinence cases. The transobturator tape (TOT) procedure has advanced the treatment for SUI since it was first described in 2001[4,6]. Comparative studies have demonstrated equal efficacy to the well-established retropubic route of the transvaginal tape (TVT)[7]. Although the transobturator approach is associated with a reduced risk of bladder and urethral perforation, compared to the retropubic approach of the TVT; there is an increased; risk of vaginal perforation with a TOT approach[7]. The main finding of our study is that definitive surgical excision of eroded TOT mesh followed by an additional anti-incontinence procedure is an effective solution to this challenging clinical scenario. In our study, the distribution of presenting symptoms for eroded TOT mesh after the TOT procedure varied. Pain during sexual intercourse (dyspareunia) and dysuria were the most prevalent presenting complaints, and were found in 9/16 patients (56%) and 3/16 patients (18.75%) of patients, respectively. These findings are consistent with other studies that describe both symptoms as predominant presenting symptoms after erosion of TOT mesh[9]. These symptoms may develop from direct contact during sexual intercourse or from direct contact of the eroded material with host urine leading to subsequent dysuria. Dyspareunia has been reported to be caused by mesh erosion, mesh infection, mesh shrinkage or extensive fibrosis. Either the female patient or the male sexual partner may complain of dyspareunia. The male partner may complain of the dyspareunia before the female indicating that male dyspareunia may be an early sign of mesh erosion. A review recently reported an overall incidence of dyspareunia following surgery for SUI of 6.2%[10].

Other common presenting symptoms are recurrent SUI and de novo groin pain[11]. Chronic groin pain as a result of mid-urethral sling placement can become a challenging problem for the surgeon post operatively. It has been reported in up to 40% patients after trans-obturator sling placement[12] and as per a recent meta-analysis is more common in 'inside-to-outside' trans-obturator approach[13]. In our study, one patient complained of persistent groin pain following TOT. This resolved following excision of the mesh. Another important finding we noted was the mean duration of presenting symptoms before diagnosis was

prolonged at 14.5 months. This suggests that clinicians are poor at diagnosing erosive complications after the TOT procedure. A higher index of suspicion for TOT erosion should be observed in the context of previous anti-incontinence surgery[11]. The overall TOT erosion rate in the present study was 7% and this finding is consistent with another study by Kaelin-Gambirasio et al. that demonstrated a vaginal erosion rate of 7.6% among 233 females undergoing the TOT procedure after 27 months follow-up[14]. However, an important secondary finding unique to the present study is the relatively higher rates of TOT erosion in patients with a previous history of urological or gynaecological procedures. Interestingly, 10/16 (62.5%) patients in our study had a history of a prior urogynecolgical surgical procedure. These findings suggest that previous pelvic surgery may predispose to poor wound healing in pelvic tissues with a resultant increased risk in this patient cohort for developing postoperative mesh erosion. A recent retrospective study of patients who underwent either TVT or TOT also showed increased risk of mesh erosion in patients who had previous undergone pelvic organ prolapse or incontinence surgery[15]. A paucity of data is available on definitive surgical treatment options for eroded TOT mesh. The resection of eroded TVT mesh in a small group of patients via an open suprapubic approach has been reported[16]. More recently, less invasive endoscopic approaches using transurethral electroresection as well as endoscopic scissors have been described[17]. In the present study, open excision of the eroded segment was performed. Other studies have described the role of endoscopic management including the use of laser for endoscopic excision of eroded polypropylene mesh[11,18] with encouraging results.

A limitation to our study is that it is a single-centre, retrospective analysis of a prospectively maintained database. However comprehensive follow-up was maintained on all females presenting with TOT erosion after their initial procedure and no patients were lost to follow-up. Another potential limitation is that alternative, and perhaps more minimally invasive surgical treatment options, such as excision with laser therapy, for tape-mesh erosion were not compared. However, a randomised control group was not available for comparative purposes due to the infrequency of erosive complications after anti-incontinence procedures and this is an area that may be compared in future randomised prospective studies. The TOT procedure is increasingly being used as a treatment for stress urinary incontinence as a result of its minimally invasive nature and high success rates. It is likely that the frequency of TOT erosion is will increase with increased number of patients undergoing the procedure. In our cohort, we followed 16 female patients presenting with an eroded TOT mesh and described the presenting symptomatology and the definitive treatment options for the complication of mesh erosion. Our findings provide important knowledge on the risk factors, clinical presentation and surgical treatment options for managing eroded tape-mesh as a complication of the TOT procedure.

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Patients Hospitalised with an Acute Exacerbation of COPD: Is There a Need for a Discharge Bundle of Care?

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Abstract
Acute Exacerbations of COPD (AECOPD) are the commonest cause of hospitalisation for patients with COPD. A number of interventions are known to improve care for such patients. Internationally and in Ireland, there is significant variation in care delivered to such patients. We reviewed admissions with AECOPD (n=174) to an Irish teaching hospital during one year, to determine if recommended interventions had been delivered to patients prior to discharge. The most frequently delivered of such interventions were: assessment of oxygen requirements 151 (87%) and arrangements for follow-up 135 (78%). The least frequently delivered were: referral for pulmonary rehabilitation 19 (11%) and advice given regarding influenza vaccination 27 (17%). Patients who received care from a respiratory physician or respiratory clinical nurse specialist (RCNS) received more interventions than those cared for by other specialties. This study demonstrates poor compliance with internationally agreed interventions. The introduction of a discharge bundle of care for use in Irish hospitals should be considered.

Introduction

Acute Exacerbations of COPD (AECOPD) are the main cause of hospitalisations among patients with COPD and place a considerable burden on health services. Ireland has a high rate of hospital admissions for AECOPD with an admission rate 60% greater than the UK[1]. AECOPD are associated with decreased quality of life, a more rapid rate of decline of lung function and with subsequent hospitalisations and death[2-4]. A number of interventions have been shown to be of benefit for patients hospitalised with an AECOPD[5]. Guidelines recommend that a number of interventions should be in place by the time patients are discharged from hospital to the community. Despite these guidelines, there is evidence that many patients do not receive the recommended interventions while in hospital[6-8]. Within hospitals, respiratory physicians are more likely to deliver recommended interventions when compared to other specialists[9-12]. The aim of the study was to identify the proportion of those patients admitted with AECOPD who had received a number of recommended interventions by the time of discharge. A secondary aim of the study was to examine the association between the delivery of recommended interventions and care under a respiratory physician and a respiratory clinical nurse specialist (RCNS).

Methods

The Hospital Inpatient Enquiry (HIPE) database was searched to generate a report of discharges admitted with a principal diagnosis of AECOPD (ICD-10 J44, J44.1) between 01/01/2013 and 31/12/2013 to a university teaching hospital. A retrospective review of charts was carried out to determine if ten specific interventions had been delivered to patients prior to discharge (Table 1). The interventions included were agreed with key respiratory physicians in the hospital and are recommended by clinical guidelines (e.g. GOLD)[5]. A total of 219 eligible discharges were identified and of these, 174 (74%) charts were available for review. Each clinical record was reviewed to see if there was documentation of delivery of interventions and a checklist form was completed accordingly. Smoking cessation assistance was considered to have been given if there was documentation of a prescription of nicotine replacement therapy, buproprion or varenicline, and/or review by the smoking cessation team and/or brief intervention delivered by clinical staff. Spirometry was considered to have been done if there was a record of spirometry results in the patient's chart. Assessment of oxygen requirements were determined if there was documentation of satisfactory oxygen saturation of >90% on discharge, or if the patient was assessed for long term oxygen therapy (LTOT). Influenza vaccination advice or history was included as an intervention only for those admissions during the influenza season.

Patients who were transferred to another hospital before discharge (n=12) were excluded from analysis of some interventions e.g. arrangement of follow-up and arrangements made for vaccination. Nine patients documented as unsuitable for review of inhaler technique due to cognitive impairment were excluded from analysis. Thirty-two patients documented as unsuitable for pulmonary rehabilitation or living outside the catchment area for referral were excluded from analysis. Associations between variables were explored using the chi-square test for categorical variables (statistical significance set at $P < 0.05$).

Table 1: Interventions reviewed

Interventions reviewed
Inhaler Technique checked
Written plan given to patient or caregiver
Smoking cessation assistance offered
FEV1 recorded
Oxygen requirements assessed
Referred to pulmonary rehabilitation
Follow-up arranged
Pneumococcal vaccination status discussed
Influenza vaccination status discussed
Arrangements for vaccination made

Table 2: Characteristics of admissions

		n	%
Age	Median age in years	73	
Gender	Male	94	**54.0**
	Female	80	**46.0**
Current Smoker	Yes	66	**37.9**
	No	98	**56.3**
	Not recorded	10	**5.7**
Medical Card	Yes	143	**82.2**
	No	30	**17.2**
	Not recorded	1	**0.6**
Total		174	**100.0**

Results

The median age of the patients was 73 years, and 54% were male. More than 80% were General Medical Service (GMS) patients (Table 2). A total of 38% were current smokers. Smoking status was not recorded for 5.7% of patients. The proportion of patients who received each recommended intervention is shown in Table 3. Compliance with any single intervention was not 100% across the patient group. More than half (55.2%) of patients received care from a respiratory physician. Care under a respiratory physician was associated with a higher delivery

CPD available online at www.imj.ie and questions on page 287.

of the following interventions: smoking cessation assistance, arrangements for follow-up, advice regarding pneumococcal vaccination, arrangements for vaccination when appropriate (Table 4). However, the delivery of many interventions remained low, even for respiratory physicians: 19.4% of patients were referred for pulmonary rehabilitation, 23.3 % received influenza vaccination advice, and 32% were given a written management plan. For other specialties the rate was even lower at 10.3%, 11.1% and 19.1% respectively. No statistically significant association was found between referral rates to a RCNS by respiratory physicians vs. other specialities (73.9% vs. 73.2% p=0.923). A greater proportion of patients who were seen by a RCNS received the following interventions: review of inhaler technique, written management plan, smoking cessation assistance, documentation of FEV1, follow-up arranged, and recommendations regarding influenza vaccination. These differences were statistically significant (p<0.05).

Table 3: Proportion of Interventions Delivered

Intervention Delivered	n	%
Inhaler technique checked	103	59.2
Written management plan given	40	23.0
Smoking cessation assistance offered	39	59.1
FEV1 recorded	100	57.5
Oxygen requirements assessed	151	86.8
Referral to pulmonary rehabilitation	19	11.1
Follow-up arranged	135	77.6
Pneumococcal vaccine advised	29	16.7
Influenza vaccine advised	27	17.8[1]
Arrangements for vaccination made	15	8.6

[1] Refers to those admitted during Influenza Season

Table 4: Proportion of Interventions Delivered: Respiratory Vs. Other Physicians

Interventions Delivered	Respiratory Physician n (%)		Other Physician n (%)		p
Inhaler Technique	58	(66.7)	45	(63.4)	0.666
Written Plan	27	(32.5)	13	(19.1)	0.063
Smoking Cessation Assistance	29	(72.5)	10	(38.5)	**0.006**
FEV1 Recorded	59	(64.8)	41	(55.4)	0.218
Oxygen Requirements	87	(92.6)	64	(84.6)	0.086
Pulmonary Rehabilitation	13	(19.4)	6	(10.3)	0.160
Follow-up Arranged	81	(91.0)	54	(78.3)	**0.024**
Pneumococcal Vaccine	21	(23.9)	8	(10.8)	**0.031**
Influenza Vaccine	20	(23.3)	7	(11.1)	0.057
Arrangements for Vaccination	13	(15.9)	2	(2.8)	**0.007**
Total number of patients	96	(55.2)	78	(44.8)	

Discussion

Our study is consistent with other studies[6-9], which have demonstrated poor compliance with internationally agreed COPD discharge interventions. In our study, some interventions were delivered to only a minority of patients e.g. only 11% referred for pulmonary rehabilitation. Patients received more interventions if they were under the care of a respiratory physician or RCNS. In particular, patients seen by a RCNS during admission were more likely to receive interventions such as: review of inhaler technique, smoking cessation assistance and recommendations for influenza vaccination. However, some interventions were still not delivered to many patients. Many barriers to implementing interventions for patients with AECOPD have been identified in the literature. Lack of knowledge of the benefits of some interventions e.g. pulmonary rehabilitation may be a factor, particularly for non-respiratory physicians[13]. However, a lack of knowledge cannot explain the low level of delivery of some interventions by those specialised in respiratory medicine. Clinical staff, particularly non-respiratory physicians and nurses may not have the skills to demonstrate inhaler technique. In one study, as few as 7% of healthcare staff could demonstrate the correct use of inhalers to patients[14]. This was likely to be a factor in our study as only one patient not seen by a RCNS had their inhaler technique reviewed. There may be the perception amongst hospital doctors that some interventions are the responsibility of general practitioners. This has been reported in the literature in relation to smoking cessation and vaccination[13]. In Ireland, where vaccination is administered in primary care this may be an issue.

Smoking cessation in patients with COPD has been shown to decrease their mortality yet in our study smoking status was not even documented in 5.7% of patients. Smoking cessation assistance was not offered to a quarter of smokers, and even for those smokers under the care of the respiratory team, the offer of smoking cessation assistance was sub-optimal. Therapeutic inertia may play a role.[15] There is evidence that many physicians believe that COPD is not a treatable condition, and that nothing can be done for patients with COPD who continue to smoke[15]. Hospital physicians may also believe that smoking cessation assistance is not part of their role[13]. This is despite the benefits of smoking cessation assistance, which should be offered to all patients with COPD who smoke[5]. Therapeutic inertia may also play a role in the low levels of other interventions delivered to patients. In addition, a perceived difficulty in implementing recommendations from guidelines where complex behaviour change is required e.g. written self-management plans, may be a barrier[13]. This may help explain the low levels of delivery of some interventions by respiratory physicians and RCNS. Referral to pulmonary rehabilitation may be affected by the long waiting times reported for this service, which may be a deterrent to referral. The reasons for low rates of performance of spirometry and oxygen assessment[16] require exploration.

A number of limitations to this study exist. As with other studies of this kind, it is possible that interventions were delivered to patients but not recorded in patients' charts. This study was carried out in a single centre and results may not be pertinent to other hospitals. Given that this centre has a multi-disciplinary respiratory team these results may in fact be more favourable than in other centres. Results of this study are however consistent with findings from other studies[6-9]. Several initiatives have been described to improve the delivery of recommended interventions to patients hospitalised with AECOPD. One strategy is the use of electronic reminders. However, evaluation of this strategy did not demonstrate increased adherence to guidelines in one study[17]. A survey of physicians in the USA identified measures that physicians themselves believed improved adherence to guidelines for COPD[18]. These included changing responsibilities of clinical staff, and providing feedback on routine guideline adherence to clinicians. Whether these factors translate to an increased adherence to guidelines is unknown. Introducing quality improvement indicators for the management of COPD with reporting of performance to clinicians improved the delivery of interventions in an outpatient setting in one study[19].

Bundles of care have been introduced for the management of hospitalised patients with COPD at different stages in their care pathway, in order to help standardise the care of patients, and maximise adherence to guidelines[20]. We have previously demonstrated that the introduction of an admission care bundle improves the quality of care delivered to patients admitted with AECOPD[21]. The British Thoracic Society, together with a number of partners have developed discharge bundles of care for patients with COPD, which are now in use in 18 UK hospitals. A discharge bundle of care is a checklist to ensure that patients being discharged from hospital to the community have received a number of high impact interventions with the aim to reduce readmissions. The introduction of a discharge bundle of care in hospitals has resulted in reduced readmissions for COPD and increased adherence to guidelines[22,23]. Introduction of a discharge

bundle of care improved referral for smoking cessation assistance from 18.2% to 100% and review of inhaler technique increased from 59.1% to 91.2% of admissions[22]. Referral rates to pulmonary rehabilitation rose from 13.6% to 68%. Similar improvements were seen in administration of self-management plans[22]. While the barriers to the delivery of interventions in this hospital require further exploration, this study supports the introduction of measures to improve the delivery of interventions to patients with AECOPD. A discharge bundle of care for patients hospitalised with AECOPD should be considered and is supported by evidence from the literature. This is likely to aid in standardising care for patients and reduce variation in the delivery of care, particularly in hospitals, which may not have a dedicated respiratory team. On-going audit of the care of all patients admitted to hospital with AECOPD is required. Training of medical staff of the benefits of interventions for patients with COPD is also important.

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The Use of Inhaled Nitric Oxide in a Tertiary Neonatal Intensive Care Unit

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Abstract
There is currently insufficient evidence to create a standardised protocol for the use and weaning of inhaled nitric oxide (iNO). We aimed to determine our application of iNO in this patient cohort. We performed a retrospective chart review on patients receiving iNO therapy for persistent pulmonary hypertension of the newborn (PPHN) from a single tertiary neonatal centre in 2014. The data was entered into the European Inhaled Nitric Oxide Registry. Thirty two babies were treated with iNO during this period, 9 of which were less than 32 weeks gestation. The median time to initiation of iNO treatment was 4-5 hours and the median duration of treatment was 74 hours for term and 66 hours for preterm infants. We recommend that further use of the European Inhaled Nitric Oxide Registry across more neonatal units in the Republic of Ireland could lead to the development of national guidelines on iNO use and weaning in this cohort.

Introduction

Inhaled nitric oxide (iNO) is widely used in neonates as the primary treatment for pulmonary hypertension (PH)[1,2]. Its commonest indication is persistent pulmonary hypertension of the newborn (PPHN), which is a disorder primarily affecting term and late preterm infants. PPHN is characterized by hypoxemic respiratory failure secondary to failure of a normal transition of the pulmonary vasculature from a high resistance fetal state to a low resistance extra uterine circuit[3,4]. In addition, iNO has been used in preterm infants with evidence of pulmonary hypertension (PH) with variable clinical efficacy. A recent Cochrane review on the use of iNO in this population concluded that iNO does not appear to be effective in preterm infants with hypoxic respiratory failure and does not improve survival without bronchopulmonary dysplasia[5]. The use of iNO in the setting of PH is associated with a variable response rate with up to 40% of infants either having a transient response or failing to demonstrate an improvement in oxygenation[2,6]. Weaning of iNO once a response is achieved is not standardised. Furthermore, there is no current evidence recommending concomitant therapies in infants with PH who fail to respond to iNO. Assimilating this information may pave the way for a more standardised approach to the use of iNO in infants with PH. In October of 2013, the Rotunda Hospital, Dublin, Ireland joined the European Inhaled Nitric Oxide Registry (https://www.medscinet.net/ino/). This is a collaboration established in 2006 to collate data regarding the indications for iNO use, thresholds and duration of treatment, concomitant treatments, adverse effects and clinical outcomes. In this study, we present the results of data submitted to the Inhaled Nitric Oxide Registry of infants admitted to the neonatal intensive care unit between January and December 2014. We aimed to highlight the indications for iNO use, duration of therapy, the use of other medications, and present outcomes of infants who received iNO in our centre.

Methods

This was a retrospective audit of all patients admitted to the Rotunda Hospital's neonatal intensive care unit (NICU) who underwent treatment with iNO for pulmonary hypertension between January and December 2014. All infants receiving iNO are entered into the Inhaled Nitric Oxide Registry following discharge from the hospital or death occurring in the NICU in an anonymised fashion. The data was collected from patient's charts and entered into the data template provided by the Registry. The Hospital's Clinical Audit Committee approved this study. We recorded the number of patients that were treated with iNO, their gestational age and birth weight. Nitric oxide parameters including the time of commencement (hours of age), the maintenance and maximum dose used and duration of treatment were recorded. Cardio-respiratory parameters prior to treatment and one hour following treatment were collected: fraction of inspired oxygen (FiO_2); pre-ductal oxygen saturations; oxygenation index; mean airway pressure (MAP, cmH2O); partial pressure of oxygen (pO_2 in Kpa); heart rate; systolic and mean blood pressure. We captured the data on concomitant therapeutic interventions including ventilator mode, use of surfactant, and the use of inotropic support. We collected the following outcomes of interest - duration of iNO use; rebound hypoxemia following iNO discontinuation (defined as an increase in FiO_2 requirements > 20% to maintain adequate pre-ductal saturations); length of NICU stay; cranial ultrasound findings; the need for extra corporeal membrane oxygenation (ECMO) and death before discharge. The cohort was divided into a term/late preterm group (Labelled "Term", 35 to 42 weeks) and a preterm group (Labelled "Preterm", less than 32 weeks). There were no infants between 32+0 and 34+6 weeks gestation in the cohort. Values were presented as medians [inter-quartile ranges] or as counts (percent). Two group comparisons were carried out using the Mann-Whitney U test for continuous variables and Chi Square (or Fisher Exact test) for categorical data. Paired data were compared using Wilcoxon signed-rank test. A p value of < 0.05 was considered significant. SPSS (Version 22, IBM Corp) was used for analysis.

Results

During the study period, 1439 infants were admitted to the neonatal intensive care unit of the Rotunda Hospital between January and December 2014. Thirty two infants (2.2%) received iNO, nine of whom were less than 32 weeks gestation. Table 1 demonstrates the clinical characteristics of the infants, the clinical indications for iNO, and the concomitant therapy. The median time for iNO commencement was 4 and 5 hours in term and preterm infants respectively (Table 1). In term infants, meconium aspiration syndrome was the commonest indication for iNO administration (48%), while in preterm infants, pulmonary hypoplasia was the leading condition (45%). Table two illustrates the cardio-respiratory characteristics before and one hour after iNO commencement. There was a significant reduction in FiO_2 requirements to maintain adequate saturation in term and preterm infants, which was apparent within one hour of iNO administration. However, the OI only improved in the preterm group. There was no change in mean airway pressure, pO_2, heart rate or blood pressure in either group during the same time period (Table 2). Echocardiography was performed in 9 infant prior to iNO commencement (6 in the term and 3 in the preterm group). Pulmonary hypertension was identified on all the scans performed. The remainder of the infants all underwent an echocardiogram during iNO therapy, all of which identified the presence of pulmonary hypertension. In all infants, a follow up echocardiogram was performed within 24 hours of iNO commencement. The

Table 1: Clinical Characteristics and outcomes of Infants receiving iNO

	Term Infants n=23	Preterm Infants n=9	p
Gestation (weeks)	40 [39 – 41]	27 [24 – 31]	<0.001
Birth weight (g)	3550 [3310 – 3860]	900 [773 – 1365]	<0.001
Male	12 (52)	8 (89)	0.1
Diagnosis			
Meconium aspiration syndrome	11 (48)	1 (11)	
Sepsis	1 (4)	1 (11)	
Hypoxic Ischaemic Encephalopathy	4 (17)	0	
Transient Tachypnea of the Newborn	2 (9)	0	
Pulmonary Hypoplasia	0	4 (45)	NA
Pneumothorax	2 (9)	1 (11)	
Associated with Trisomy 21	2 (9)	0	
Polycystic Kidney Disease	1 (4)	0	
Severe RDS	0	2 (22)	
Surfactant prior to iNO	17 (74)	8 (89)	0.6
Inotropes prior to iNO	10 (71)	4 (44)	0.6
High Frequency Oscillation	3 (13)	2 (22)	0.6
iNO Start time (hours of Age)	4 [1 – 10]	5 [2 – 8]	1.0
iNO duration (Hours)	74 [27 – 114]	66 [23 – 129]	0.75
iNO Maximum Dose (ppm)*	40	20	0.04
Rebound Hypoxemia	2 (9)	1 (11)	1.0
Length of NICU stay in survivors (days)	11 [9 – 15]	48 [29 – 75]	0.007
Abnormal cranial ultrasound scan	3 (13)	6 (67)	0.006
Death Before discharge	4 (17)	4 (44)	0.18

Values are presented as medians [inter-quartile ranges] or count (percent).

Table 2: Cardio-respiratory characteristics before and one hour after iNO administration in the two groups

	Term Infants (n=23)		Preterm Infants (n=9)	
	Pre iNO	1 hour post iNO	Pre iNO	1 hour post iNO
FiO_2	100 [50-100]	60 [40-100]*	100 [55-100]	50 [23-75]*
Pre Ductal Saturation	95 [84-98]	97 [93-100]	92 [80-96]	96 [92-99]
Oxygenation index	9.3 [6.4-19.4]	6.7 [5.8-22.5]	26 [17-60]	6.3 [1-13]*
MAP (mmHg)	11 [9-14]	11 [9-15]	12 [9-15]	12 [10-15]
pO_2 (KPa)	8.4 [5.1- 18.7]	8.4 [7.2-12.6]	5.4 [3.4-7.3]	6.0 [4.3-8.7]
Heart Rate	143 [124-156]	139 [126-159]	165 [140-189]	140 [133-183]
Systolic BP (mmHg)	66 [56-70]	57 [55-66]	40 [36-44]	41 [36-46]
Mean BP (mmHg)	50 [41-64]	49 [44-64]	31 [27-34]	32 [22-34]

Values are presented as medians [interquartile ranges]. The Wilcoxon Signed Rank Test was used to assess the differences in the parameters before and 1 hour after iNO administration in each group. * indicates a significant p values (<0.05) before and after iNO administration.

median duration of iNO treatment was 74 and 66 hours for term and preterm infants respectively.

Table 1 also illustrates important outcomes in the two groups. The overall mortality rate in the entire cohort was 25% (8 out of 32). Three infants in the term group had abnormal cranial ultrasound and magnetic resonance imaging, two with hypoxic ischemic encephalopathy (HIE) and one with meconium aspiration syndrome (MEC). The two infants with HIE and abnormal imaging in the term group died following withdrawal of life sustaining treatment (WLST) due to severe hypoxic brain injury. Two further term infants died: one following a diagnosis of polycystic kidney disease and one with severe meconium aspiration syndrome and multi-organ failure. In the preterm group, six infants had abnormal cranial ultrasound imaging consisting of severe IVH and periventricular leukomalacia. Three infants died following multi-organ failure and one following WLST secondary to severe intraventricular haemorrhage with significant bilateral parenchymal extension. None of the infants in this cohort required ECMO.

Discussion

The majority of patients receiving iNO had gestations between 35 and 42 weeks, with the commonest indication being MAS. Interestingly, many of those infants received surfactant prior to the administration of iNO. Surfactant deficiency may contribute to respiratory failure in infants with MAS and other conditions (such as HIE). A recent Cochrane review has highlighted that surfactant administration in infants with MAS may reduce the severity of respiratory illness and decrease the risk of ECMO (RR 0.64, 95% CI 0.46 – 0.91)[7]. In our unit, pulmonary hypertension is not a contra-indication to therapeutic hypothermia (TH) in infants with moderate to severe hypoxic ischaemic encephalopathy (HIE) and as such, four infants with HIE were treated with iNO to control the elevated pulmonary pressures and allow for the continuation of TH. Seventeen infants in the term group (74%) were also in receipt of inotropes to support the circulation. Only a minority of infants were ventilated with high frequency oscillation highlighting that adequate ventilation can be achieved with conventional ventilation methods in most instances. The duration of iNO use in the term population is relatively longer than that reported in the literature[8] and those reported in the whole of the Registry for 2014 (median of 47 hours in infants between 22 – 31 weeks [n=84] and median of 51 hours in infants between 32 to 42 weeks [n=106], source iNO Registry website, newsletter March 2014). In 2013, an iNO weaning guideline was introduced in our unit that aimed to wean infants from iNO within 12 to 24 hours following a sustained response lasting 6 to 12 hours. In our term group, there was an apparent short term response to iNO illustrated by a fall in FiO_2 and OI within the first hour of life. The response to iNO treatment was not met with a timely weaning of iNO.

Therefore the long duration of iNO therapy in this population may represent a lack of adherence to the weaning guideline rather than a lack of response to iNO. This lack of adherence may stem from the lack of awareness of the available weaning strategy and an arrest of the weaning plan overnight when staff shortages preclude it. The relatively high rate of combined mortality or abnormal neuroimaging in this population (30%) highlights the sick nature of those infants. Nine preterm infants with a median gestation of 27 weeks were also treated with iNO during the study period. Those infants had a predominant diagnosis of pulmonary hypoplasia. The majority of those infants also received surfactant therapy. There was a high incidence of abnormal imaging and mortality in this population which demonstrates the poor outcome for preterm infants requiring iNO as previously reported in the literature[9]. The rates of the off-label iNO use in preterm infants are consistently rising despite the lack of a clear benefit for this therapy in this population[10]. Several randomised controlled trials have evaluated the role of iNO in the management of preterm infants with inconsistent results. The most recent American Academy of Paediatrics Clinical Report on the use of Inhaled iNO in preterm infants does not recommend the use of iNO in preterm infants with respiratory failure, nor does it recommend its use to reduce the incidence of chronic lung disease. There is limited data on the effects of iNO treatment on pulmonary function in this population[11]. Further studies on the use of iNO in preterm infants with specific disease states needs to be conducted. Examining the outcomes of such infants in the setting of the registry may be the only feasible method of acquiring the data as many of those conditions are relatively rare.

Data obtained from this Registry has highlighted interesting information on the use of nitric oxide in a tertiary neonatal intensive care setting. There are an increasing number of preterm infants undergoing iNO therapy without clear evidence of benefit. Currently, only two Irish centres are enrolled in the Inhaled Nitric Oxide Registry (The Rotunda Hospital and Coombe Women and Infants University Hospital). Other tertiary centres in the Republic are encouraged to join the Registry in order to collate Republic specific data that can be used to devise national guidelines for the use of iNO in the neonatal population.

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The contribution of the iNO Registry

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The Establishment of a Pilot Paediatric Obesity Clinic at the University Hospital, Limerick

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Abstract
This study describes the establishment of a pilot Paediatric Obesity Clinic (POC) in the University Hospital Limerick (UHL). Referrals were received from consultant paediatricians in the catchment areas of UHL for paediatric patients with high levels of excess adiposity. Fifteen patients and their families were invited to the POC in 2012. An initial medical assessment was conducted by 2 consultant paediatricians. Patients were also reviewed by a dietitian, a physiotherapist and physical activity experts from local Sports Partnerships. Twelve children and their families attended the POC (mean age=8.08 years; Range=3.6-13.6): 11/12 were overweight and 9/12 were obese. Abnormalities in blood work were detected as follows: 1/7 had elevated LDL-cholesterol; 2/8 had elevated triglyceride levels; 4/8 had elevated fasting insulin; 2/8 had elevated fasting glucose. With the current prevalence of obesity in paediatric populations, initiatives such as UHL's POC need to be established, funded and supported, to try to meet complex, multidisciplinary patient needs and to prevent future complex and expensive health complications.

Introduction

Obesity management is conservatively estimated to cost between 0.09 - 0.61% of total gross domestic income in Western and Northern Europe[1]. Approximately 25% of Irish youths are overweight or obese[2]. The aetiology of obesity is multifactorial, including excessive caloric intake, insufficient physical activity and excessive sedentary behaviour[3]. Children with overweight and obesity are at increased risk of obesity-related comorbidities, including type 2 diabetes mellitus, obstructive sleep apnea, dyslipidaemia and psychological consequences[4]. Obesity tracks into adulthood: obese children are likely to become obese adults[5,6]. The prevention and treatment of paediatric obesity has been identified as a key public health initiative[7]. Regular monitoring of diet and physical activity behaviours is essential to ensure compliance with recommendations from healthcare providers (i.e. paediatricians, dietitians, physiotherapists). However, resources available to manage paediatric obesity are limited[8]. The objective of this report is to describe the establishment of a Paediatric Obesity Clinic (POC) at the University Hospital Limerick (UHL), which aims to provide a multidisciplinary medical service for obese paediatric patients, within resource limitations. Descriptive information of attendees will be provided, while recommendations for the continued growth of the clinic will be described.

Methods

Referrals for paediatric patients with high levels of excess adiposity to the POC were accepted from consultant paediatricians in UHLs catchment area. The POC comprised a full day clinic visit (of which 2 were scheduled) and a follow-up full day clinic (of which 1 was scheduled for all patients to attend). Invitations to the POC were sent to the parents/guardians of referred paediatric patients (n=15). On arrival for the first day of clinic, attendees and their parents completed the Obesity Clinic Assessment Questionnaire, which was an adaptation of assessment methodologies from the American Academy of Paediatrics[9]. Attendees and their parents were provided individual consultations with a dietitian and with 2 consultant paediatricians: 1 with a special interest in diabetes and endocrinology and 1 with a special interest in metabolic medicine and rare diseases. During consultations, measures of height, weight were obtained for calculating body mass index (BMI) and both waist and hip circumference were obtained to calculate waist-to-hip ratio and waist-to-height ratio. BMI was calculated as (weight in kg/(height in m)^2) and converted to percentiles based on the Centers for Disease Control and Prevention (CDC) reference data[10]. Participants' waist circumference, measured as the shortest circumference between the lowest border of the rib cage and the iliac crest, was measured to the nearest centimetre while they were standing and after gently exhaling[11]. The waist-to-height ratio (Waist (cm)/Height (cm)) was calculated, and a cutoff of 0.5 was used to identify participants with low and high waist-to-height ratios[12]. Blood pressure was measured manually using a mercury sphygmomanometer and an appropriately sized cuff. A sample of blood for examination of biomarkers (e.g. lipid profiles; thyroid function tests; renal, liver and bone profiles) was also obtained from each attendee. Individual consultations were followed by 30 minute group workshops with healthcare professionals on physiotherapy for exercise, nutrition for health and physical activity for health. A questions and answers and a discussion period was provided at the end of each session to allow parents and attendees to discuss individualised advice on specific problems or issues they encounter. At the end of the clinic day, parents and patients were asked to provide feedback on their experiences of the clinic day.

After each full day clinic, each patient was scheduled for the follow-up clinic, at which they were again seen individually by the dietitian and 2 consultant paediatricians, provided repeat

measures of anthropometrics and blood work and provided feedback on progress made since the initial POC.

Results

Of the initial 15 referrals to the pilot POC, 12 paediatric patients (mean age=8.1; Range=3.6-13.6 yrs) and their parents attended the POC. All attendees were accompanied by their mother, with only 1 attendee accompanied by both their mother and their father. A flow chart of the referrals, attendance at POC days and attendance at follow-up clinic is provided in Figure 1.

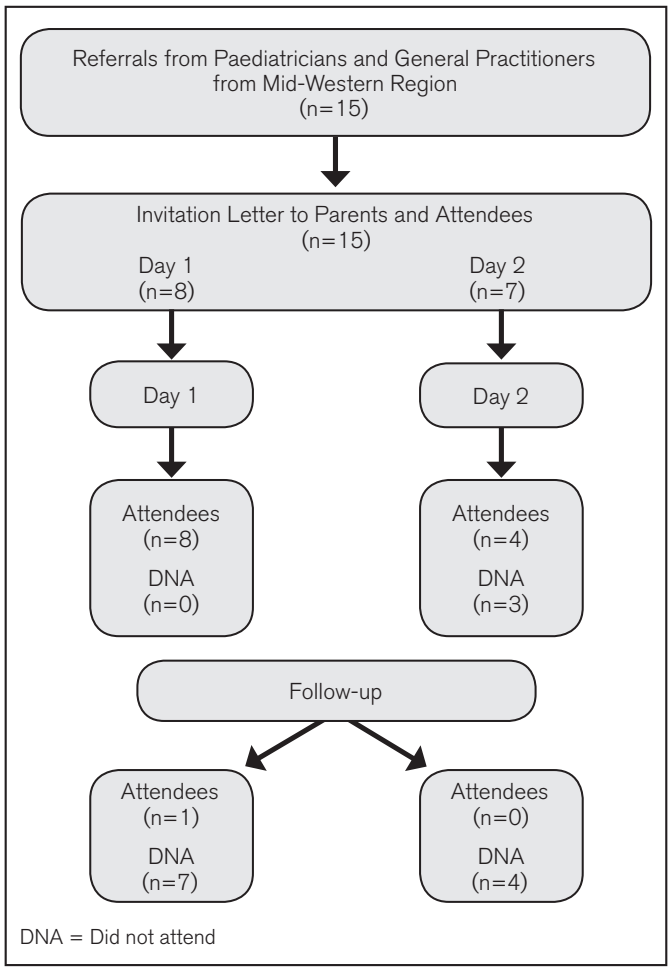

Figure 1: Flow chart of referrals, attendance at paediatric obesity clinic days and attendance at follow-up clinic

Descriptive Information

Descriptive characteristics of attendees for age, body composition measures and selected cardiometabolic risk factors are provided in Table 1. At the time of measurement, three attendees had 3 cardiometabolic risk factors at levels exceeding the expected values. All attendees at the POC had a waist-to-height ratio of greater than 0.5. Of the 12 attendees that were invited to return to the follow-up clinic day, only 1 patient returned.

Parent/Guardian reported information

The Obesity Clinic Assessment Questionnaire assessed parent/guardian-reported health behaviours for the attendees of the POC. A range of poor dietary behaviours were observed in the majority of attendees, including high levels of sugary drinks consumed daily, a lack of structured meals in the home, low levels of vegetable intake and high levels of snacking (see Table 2). Furthermore, only 2 attendees consumed vegetables regularly, with remaining attendees consuming little or no vegetables daily. Although 66% of patients participated in school-based physical education, 58% exceeded the daily recommended amount of TV viewing (>2 hours/day), while 83% did not participate in any form of organized physical activity. Descriptive information for dietary and physical activity behaviours are presented in Table 2.

Table 1: Descriptive characteristics for age, anthropometric measures and selected cardiometabolic risk factors. Data are presented as mean (SD).

	All(n=12)	Male(n=5)	Female(n=7)
Age	8.1 (3.2)	8.7 (3.0)	7.7 (3.6)
Height (cm)	161.2 (8.2)	160.8 (10.3)	161.9 (4.5)
Weight (kg)	79.8 (26.4)	86.0 (30.8)	69.6 (17.0)
Waist-to-Hip Ratio	0.99 (0.04)	0.98 (0.04)	1.01 (0.03)
Waist-to-Height Ratio	0.64 (0.07)	0.68 (0.09)	0.63 (0.07)
BMI > 90th Percentile	11	5	6
BMI > 98th Percentile	5	2	3
Elevated Blood Pressure	2	1	1
Elevated Triglycerides	2	1	1
Elevated Insulin	4	3	1
Elevated Glucose	2	2	0

Table 2: Descriptive characteristics of parent/guardian-reported health behaviours.

	All (n=12)	Male (n=5)	Female (n=7)
Attempted hunger management	5	2	3
Observed child sneaking food	5	2	3
>1 soda/juice consumed daily	3	2	1
No structured Meals	2	1	1
No vegetables consumed in last week	2	1	1
TV viewing >2 hours/day	7	2	5
No organized physical activity	5	1	4
Physical Education	2	1	1

Note, 4 of the participants would not have been old enough to attend school to participate in physical education.

Parental Feedback

At the end of the POC days, parents and patients were asked to provide feedback to the multidisciplinary team. Many positives were identified, including: the broad range of accessible healthcare providers throughout the clinic; the individual consultations with healthcare providers (e.g. paediatricians and dietitians); the opportunity to meet and discuss issues with parents in similar situations; and the quantity and quality of information provided to help modify dietary and physical activity behaviours. Negative issues identified included: the lack of prior information provided in relation to clinic structure; the lack of available food and water for attendees; the absence of a point of contact within the clinic for queries; and the amount of available space for attendees and their families.

Discussion

This report describes our experiences with a pilot multidisciplinary family-based POC, which was conducted without allocation of resources. We describe a large proportion of patients with obesity and additional cardiometabolic risk factors, including elevated blood pressure, triglycerides, insulin and glucose levels. Poor dietary and physical activity behaviours were evident among patients. Several benefits of the clinic were identified by parents, but equally constructive feedback was provided. Many of the negative points identified could be addressed with sufficient allocation of resources. In Ireland, 25% of Irish youths are overweight or obese[13], are at significantly increased risk of overweight or obesity in adulthood[6] and of having obesity-related health consequences throughout their adult lives[4]. This report has identified the prevalence of multiple cardiometabolic risk factors co-existing in a cohort of overweight and obese children aged 3 to 13 years. Although cardiovascular disease is predominantly observed in adulthood, its occurrence is attributable to the

manifestation of cardiometabolic risk factors over time, often since childhood/adolescence[14]. With increasing numbers and duration of cardiometabolic risk factors in youth, asymptomatic coronary and aortic atherosclerosis also increase[15]. There is an important medical and public health need to address paediatric obesity, both in hospitals and in the community. POCs have the potential to be an effective and efficient resource to facilitate and achieve weight reduction in overweight/obese individuals[16]. The provision of clinic days, similar to those described here, presents a potential template for the efficient and effective delivery of professional healthcare support and assistance to overweight/obese paediatric patients and their families. Similar clinics, or interim clinics, in primary care would greatly complement the POC model described in this report. Alternatively, interim nurse-led hospital-based clinics to provide ongoing support to weight loss would complement this model.

Due to time and financial constraints during the establishment of this POC, two initial POC days were provided, while a follow-up day was scheduled. Significant issues were identified by the parents and patients. Families were encouraged to attend the clinic to promote a family-based approach to altering health behaviours. Unfortunately, the limited available space for provision of such clinics meant families were confined to small areas throughout the day. Parents also cited the length of the POC as a deterrent to attend future clinics, and this was compounded by the lack of provision of snacks, tea/coffee or water for patients and families. Unfortunately, financial constraints within the clinic limited the provision of such resources to parents/guardians of attendees. Although attendance rates at the initial POC days were high, the attendances at POC follow-up days were disappointingly low. The absence of on-going funding for administration, dietetic and physiotherapy support throughout the year resulted in the delay of provision of a follow-up clinic, resulting in a prolonged period (approximately 6 months) between the initial POC and follow-up. Furthermore, due to the lack of administration support, only limited notification for parents/guardians of POC attendees was possible. Disappointingly, only 1 patient returned for follow up. Existing research suggests that parents of obese children require regular contact (weekly/monthly) with services for support and motivation[17,18], particularly when encountering difficulties in implementing interventions to modify dietary behaviour[18,19]. The provision of funding to support administrative, dietetic, medical, nursing and physiotherapy services to future POC services would provide increased communication and support to parents/guardians of attendees and their families, increased opportunities for consultations with attendees, increased capacity for the POC and opportunity to follow up, providing the opportunity to evaluate the effectiveness of the POC. All of these patients were previously seen in other paediatric clinics, and were referred back to these clinics again.

Some issues were identified by healthcare providers delivering the service. The broad age range of attendees made delivery of workshops and relevant information difficult. The streamlining of age cohorts for future clinics should be considered, enabling the more efficient delivery of key information to specific age groups. Further defined criteria for eligibility is required for attendees, including where attendees are referred from (i.e. consultants only or GP's and consultants), where attendees are referred to post-clinic (back to consultants/GP's), the ages of attendees (i.e. potentially limiting children between the ages of 5 - 15), the BMI centile of attendees (i.e. only children > 95 percentile), the requirement of provision of blood samples (some parents reluctant to give consent for further phlebotomy) and the requirement for attendance at multiple clinics (i.e. initial POC day, potential for second POC day and final follow-up/evaluation POC day). The pilot POC at University Hospital Limerick has identified the need for clinics that aim to modify the health behaviours of patients with paediatric obesity. For such clinics to be successful, additional administrative and financial support is required to ensure the "buy in" from attendees and their families, to ensure the continued attendance at future clinic dates and to ensure the provision of an efficient and effective service.

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Insights and Concerns of Patients and GPs Regarding Introduction of Universal Health Insurance in Ireland

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Abstract
The implementation of a universal health insurance (UHI) model is a key political policy in Ireland. The objective here was to determine the understanding of general practitioners (GPs) and patients regarding UHI, its implementation and impact on both sets of stakeholders. Postal questionnaire to GPs, and opportunistic survey sampling of patients in two different GP practices were carried out. Response rates were 92.5% (patients) and 78% (GPs). 79.4% of patients (n=418) and 96.7% of GPs (n=149) have a 'poor' understanding of how UHI will be implemented. 89% (n=493) of patients and 98.7% (n=153) of GPs feel government communication about UHI has been 'poor'. 98.1% of GPs (n=152) and 77.3% of patients (n=383) are not confident that 'UHI will be ready for implementation by 2015'. Neither stakeholder group is confident in the government's ability to deliver UHI within the given timeframe. There is a lack of knowledge and consultation on proposals for its implementation.

Introduction

The government in Ireland promised to introduce a single tiered health system over a four-year period[1] basing access upon need. A multi-payer insurance model will fund this model of UHI, based on compulsory purchase of health insurance for all citizens with government subsidises for those on no or low income[2]. A similar system currently in place in the Netherlands has had mixed feedback[3]. Phased GP care will be 'free' at point of delivery for all citizens, with children under six years being the first recipients of 'free GP care'. Individual citizens as patients and taxpayers, along with GPs, are key stakeholders. Understanding their opinions is critical in successfully implementing changes in health policy[4]. The objective of this study is to examine the insights, concerns and expectations of patients and GPs with respect to UHI, and assess their understanding of how it will be implemented.

Methods

GPs and patients attending primary care services were surveyed. The GP sample was identified by random selection (n = 200) from the Irish Medical Council (IMC). The GP survey was a postal questionnaire between October 2012 and February 2013. Patients ('private' and GMS) were surveyed on presentation to two practices in Dublin and Wicklow. Questions related to the proposed introduction of UHI.

Results

GP response rate was 78% (n=156). Patient response rate was 92.5% (n=582). The majority of GPs and patients do not have a clear understanding of the implementation of UHI. Both groups report that communication from the government relating to UHI is poor. The majority of GPs and patients are not confident that UHI will be in place by 2016. Both stakeholders agree that UHI will lead to an increase in waiting times for appointments. According to 90.6% (N=134) of GPs, communication from the Irish Medical Organisation (IMO), on implementation of UHI has been poor. 72.8% (n=107) of GPs thought that UHI implementation would not lead to greater patient satisfaction with the health service. The majority of GPs (92.5%; N=137) indicated that radical structural changes were needed to the health service in order for it to improve patient care. A minority of patients expressed that the health service works well with only minor changes needed [18.4% (n=88)]. Almost half [47.7%], felt that there were some good things but significant change needed. One-third [33.9%] indicated that it needs to be completely re-built. A majority of patients (54.3%; n=241) disagreed that UHI would lead to greater satisfaction with GP services; whereas a majority of patients agreed that UHI would increase their satisfaction with hospital services (52.8%; n=234).

Discussion

Patients and GPs do not feel well informed about the proposed changes to the healthcare system. Few are confident that structures will be in place by 2015 to implement UHI, and GPs are concerned that UHI policy could lead to increased waiting times for patients. Defaulting and non-payment have been issues in the Netherlands with respect to UHI premiums introduced there under a similar model to that proposed for Ireland[5]. Findings from the study shows support for changes within the health service. Our results strongly suggest a deficit in communication, and lack of meaningful consultation with both patients and GPs. Poor communication and a lack of proper costing will likely lead to errors on a national level when it comes to implementation of complex change[6] and likewise changes in primary care[7]. Since the data was collected the Government White Paper has stated that the 'building blocks' for UHI would be in place by 2015 and that full implementation is due for 2019. It is evident from our data that two key stakeholder groups (GPs and Patients) are not well informed regarding these proposed changes.

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Table: Stakeholders views on the utility of UHI.

Question	Responder & Response Rates	Agree	Disagree	z-score (p<0.05)	p-value
Confident that UHI will be in place by 2015	Patient (N=496; 85.2%)	22.8%	77.3%	-5.9417	0
	GP (N= 156; 100%)	1.9%	98.1%		
UHI will lead to an increase in waiting times for appointments	Patient (N=461; 79.2%)	60.7%	39.3%	-6.225	0
	GP (N=151; 97%)	88.1%	11.9%		
UHI will reduce the disparity between public and private patients in waiting times and access to hospital care	Patient (N=453; 77.8%)	55.6%	44.4%	-6.5792	0
	GP (N=150; 96%)	24.7%	75.3%		

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A Paediatric Hernia with a Twist: The Presentation, Imaging Findings and Management of a Strangulated Ovarian Hernia

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Abstract
Indirect inguinal hernias are the most commonly encountered congenital abnormality in infants.[1,2] They may be complicated by herniation of abdominal or pelvic viscus. In girls, a herniated ovary is a relatively common finding, however torsion of the ovary is infrequent. A tender irreducible inguinal hernia in an infant girl should raise the possibility of a strangulated herniated ovary as it requires urgent surgical attention. When in doubt, ultrasound with colour Doppler easily confirms the diagnosis. Here we present the case of an ovarian inguinal hernia which had undergone torsion and review the presentation, imaging findings and management.

Case Report

A 4 month old girl presented to her local emergency department with a one day history of acute onset left inguinal swelling and a slight increase in possetting. A reducible left inguinal hernia had been diagnosed by her general practitioner two weeks earlier and a surgical outpatient appointment was pending. On examination, there was a tender irreducible left inguinal hernia. The infant was otherwise well with no significant past medical history. The patient was referred to a paediatric hospital for further specialist management. When examined by a paediatric surgeon, a tender, firm mass was appreciated in the left inguinal canal which was felt to represent a herniated ovary. Ultrasound revealed a 2.7 cm heterogenous mixed echogenicity structure containing several small anechoic foci in keeping with an enlarged oedematous ovary. Despite careful colour Doppler interrogation, no flow could be demonstrated within the ovary. There was reactive hyperaemia and oedema of the surrounding soft tissues of the left inguinal canal. (Figure 1). The patient proceeded directly to surgery. The hernial sac was opened and the ovary reduced without inspection. The hernial sac was transfixed and ligated. The child made a good post-operative recovery and was discharged home well the following day.

Discussion

Paediatric inguinal hernia may affect up to 4.4% of infants and 30% of premature infants.[1,2] They are 5-6 times more common in boys and are almost always indirect.[1,2] In females they are the result of failure of obliteration of the canal of Nuck, which usually closes by 8 months gestation. Inguinal hernias may contain intestines, fallopian tubes, uterus, ovaries or any combination of the above. The ovaries are involved in approximately 15-30% of female paediatric hernias.[1,2] Figures for the incidence of torsion of a herniated ovary on its vascular pedicle are widely disparate ranging from 2%-43%.[1-3] However this potential complication warrants urgent surgical fixation once a diagnosis has been made. The presentation depends on the presence or absence of torsion. An uncomplicated ovarian hernia is usually clinically obvious

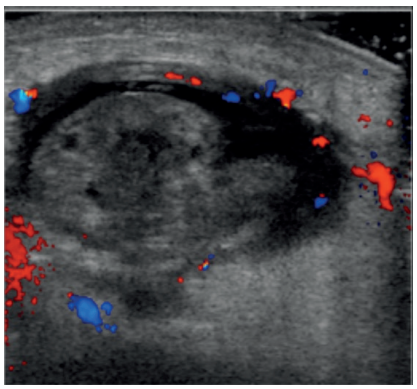

Figure 1: Ovarian Torsion: A transverse view through an oedematous ovary in the left inguinal canal with absent internal flow on colour doppler

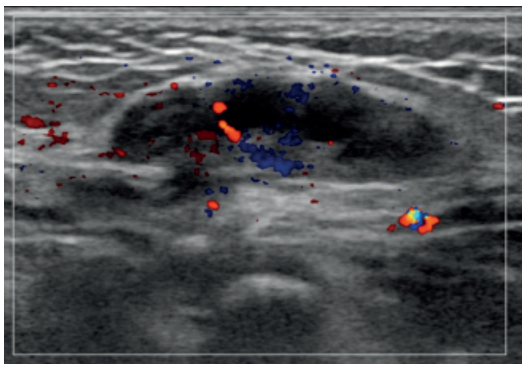

Figure 2. An uncomplicated ovarian hernia in the right inguinal canal with normal internal vascularity. The vascular pedicle can be seen extending proximally through the inguinal canal.

as a firm palpable mass within the inguinal canal and is often easily reducible. Sonographic appearances of an uncomplicated ovarian hernia are of a solid mass, hypoechoic to inguinal fat and containing anechoic follicles.[4] The vascular pedicle can be traced proximally through the inguinal canal. The ipsilateral ovary will not be visible on ultrasound of the pelvis. Figure 2 shows an uncomplicated right ovarian hernia which was seen in a 2 month old girl who attended one week later.

The presence of an irreducible hernia containing a tender mass should raise the possibility of an incarcerated viscus, with ovary the most likely in an infant girl.[5] The sonographic features are of an oedematous solid and cystic mass in the inguinal canal with absent internal blood flow. Surgery involves an open hernia repair with reduction of the involved ovary. The ovary does not need to be inspected for viability. Aziz (2004) demonstrated that simple detorsion of the ovary is not associated with any increase in morbidity. Furthermore, all patients in their study had some functional ovarian tissue at follow up, regardless of the surgeons assessment of the degree of ischaemia at the time of surgery.[6] Nonetheless, the risk of ovarian necrosis must be clearly explained to parents prior to surgery. Ovarian hernia is the most common cause of an irreducible female inguinal hernia in infants. It should be treated promptly as there is a significant risk of torsion. Physicians and radiologists should be aware of the clinical presentation and imaging findings in ovarian torsion and emergent surgical management is paramount.

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Deep Full Thickness Burn to a Finger from a Topical Wart Treatment

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Abstract
We present a case of a deep full thickness burn from topical formic acid. Our patient developed a burn over her proximal interphalangeal joint (PIPJ) of her finger, secondary to inappropriate application of an anti-wart treatment. The burn required extensive debridement, and the resultant defect was reconstructed using a subcutaneous flap from the adjacent finger (a reverse cross finger flap). She was reviewed six months post-surgery, and overall she has a sub-optimal result. This incident was referred to the Irish Medicine's Board who have since reviewed the case and ordered the manufacturer to alter their usage instructions.

Case Report

A 33 year-old lady presented to the Plastic Surgery service with a necrotic wound over the dorsum of her right little PIPJ. She reported a 6 month history of a viral wart over this area. This was treated with an over the counter anti-wart topical ointment, comprising of formic acid, and applied as directed for 30 minutes. The wart failed to resolve despite multiple treatments and so she applied the preparation for a consecutive 12 hours over night. She had a 3X2cm deep full thickness burn over the dorsum of the joint with surrounding cellulitis. She could mobilise the joint with minimal discomfort. She had no sensory deficit. She was admitted for intra-venous antibiotics and on day 2 of admission she underwent debridement. Intra-operatively she was found to have a burn involving skin, subcutaneous tissue, the underlying central slip of her extensor tendon, and joint capsule. The wound was dressed with inadine soaked paraffin gauze, which was changed daily. She had a second debridement on day 5 and was found to have a healthy granulating wound.

On day 8, she underwent the first stage of a reverse cross finger flap. This technique comprised of firstly raising a thin dermal flap from the adjacent finger, and then raising a separate subcutaneous flap of adipofascial tissue, from the same finger. This flap, which is kept attached to its native blood supply was then used to cover the defect of the burn. The dermal flap from the adjacent finger was replaced, and a split thickness skin graft was harvested from her thigh and inset over the adipo-fascial flap. This was performed successfully without any intra-op or post-op complications. The adipofascia lflap was divided from its blood supply from the adjacent finger 4 weeks later, after which she underwent intensive hand therapy. After 6 months, she was able to return to work, however she experienced significant stiffness of her PIPJ and has also developed a Boutonnière deformity. She has an extension lag of 70, with minimal flexion/extension of 5-10 at her PIPJ, and no flexion at her DIPJ. She has had to undergo intensive hand therapy and multiple attempts at progressive splinting with some improvement.

Discussion

Formic acid has become one of the most popular treatments for common viral warts, following multiple reports on its success.[1] Reports on formic acid burns are very limited in the literature. There have been some reports of burns from ingestion of formic acid and some from flash burns from industrial formic acid.[2-4] However reports of contact burns from domestic formic acid are very scarce. This case highlights the issues surrounding patients using over the counter (OTC) medications which may not have clear instructions, or where the potential hazardous side effects are not explained efficiently. The product information does not describe the potential sequelae if the product is used in a prolonged setting, as highlighted here. Use of OTC medications is increasing and poorly registered, which has led to many complications and needless admissions.[5] As more drugs are becoming available OTC, and many patients are avoiding costly GP visits and instead self-medicating, it is imperative that the instructions for use are very well described, and most importantly clearly understandable.[6] From our case report you can see the potential hazardous effects of patients abusing OTC medications.

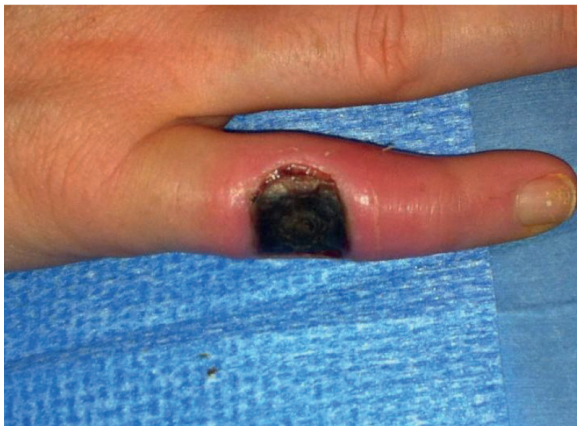

Figure 1: Non-circumferential formic acid burn to the dorsum of her fifth finger

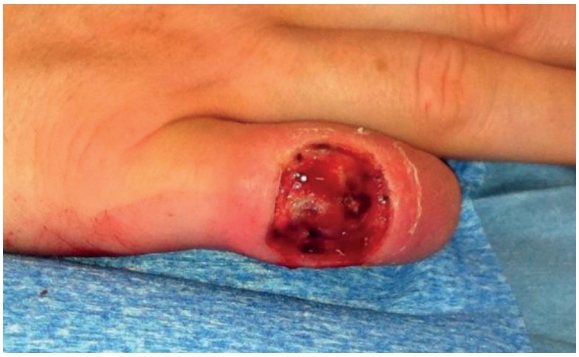

Figure 2: Post surgical debridement of the necrotic wound, with tendon and joint exposed

We reported this case to the Irish Medicines Board, who fully investigated the issue. They have since acknowledged that while the instructions for use were not followed, clearly more significant warnings need to be highlighted in the instructions for use. The product's manufacturer have since updated their website accordingly.

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An Assessment of Surgical Experience among Obstetric and Gynaecology SpR Trainees

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Abstract
Changes in gynaecological practice have resulted in a significant reduction in surgical exposure for trainees. We have attempted to assess surgical experience among obstetric and gynaecology SpR's in Ireland using an anonymous on-line questionnaire. Trainees were asked to assess their own ability to perform a variety of general gynaecological procedures. There was a 97% response rate (29/33 trainees). There were 11 trainees who were in the final or penultimate year of the scheme. This group were analysed separately to assess competency rates in those approaching the end of the scheme. They were subdivided in to those who have completed one year in a general hospital doing pure gynaecology and those who have not. Approximately half of this group (6/11) had completed a pure gynaecology year. All of these trainees deemed themselves competent to perform all general gynaecological procedures listed, with the exception of trans-urethral tape procedures, for which 3/6 reported the requirement of direct supervision. Only 2/6 deemed themselves competent to perform a total laparoscopic hysterectomy. Year 4/ 5 trainees who had not completed a pure gynaecology year displayed significantly lower competency rates for most of the procedures. With the current changes in gynaecological practice, these results highlight the importance of dedicated gynaecological surgical training.

Introduction

The practice of gynaecology has seen major changes over the past two decades. The introduction of the Mirena Coil, endometrial ablative techniques and uterine artery embolization has resulted in a dramatic reduction in the number of hysterectomies performed for benign indications. This has resulted in a significant reduction in operative exposure for obstetric and gynaecology trainees. We have attempted to assess surgical experience among obstetric and gynaecology SpR trainees in Ireland for a range of general gynaecology procedures.

Methods

An anonymous on-line questionnaire was performed asking trainees to assess their own level of competence in a variety of gynaecological procedures. Competence level was described as the ability to perform the procedure – independently; under direct supervision; or not at all.

Results

A total of 29 out of 33 trainees responded (97%). There were 11 trainees who were in their final or penultimate year of the five year Irish specialist registrar (SpR) scheme. This group were analysed separately to assess competency rates in those approaching the end of the training scheme. They were subdivided into those who have completed at least one year in a general hospital doing pure gynaecology and those who have not had this exposure and whose training has been confined to a stand-alone maternity unit.

Discussion

There was a 97% response rate to our questionnaire, (29/33) and all years of the SpR scheme were reasonably well represented.

Table 1: Procedure Competency Rates among Trainees

	All trainees n=29			Year 4/5 N=11		
	Competent	Direct Supervision	Not at all	Competent	Direct Supervision	Not at all
Diagnostic lap	28/29 (97%)	1/29 (3%)	0	11/11 (100%)	0	0
Lap Salpingectomy (ectopic)	20/29 (69%)	8/29 (28%)	1/29 (3%)	10/11 (91%)	1/11 (9%)	0
Lap Salpingostomy (ectopic)	12/29 (41%)	9/29 (31%)	8/29 (28%)	8/11 (73%)	2/11 (18%)	1/11 (9%)
Laparoscopic Bilateral salpingoophorectomy	12/29 (41%)	15/29 (52%)	2/29 (7%)	8/11 (73%)	2/11 (18%)	1/11 (9%)
Laparoscopic Ovarian Cystectomy	15/29 (52%)	11/29 (38%)	3/29 (10%)	9/11 (82%)	1/11 (9%)	1/11 (9%)
Total Laparoscopic Hysterectomy	2/29 (7%)	6/29 (21%)	21/29 (72%)	2/11 (18%)	3/11 (27%)	6/11(55%)
Total Abdominal Hysterectomy	10/29 (35%)	16/29 (55%)	3/29 (10%)	8/11 (73%)	2/11 (18%)	1/11 (9%)
Vaginal Hysterectomy	12/29 (41%)	11/29 (38%)	6/29 (21%)	8/11 (73%)	2/11 (18%)	1/11 (9%)
Pelvic Floor Repair	15/29 (52%)	9/29 (31%)	5/29 (17%)	7/11 (64%)	3/11 (27%)	1/11 (9%)
Transobturator Tape	4/29 (14%)	11/29 (38%)	14/29 (48%)	3/11 (27%)	5/11 (46%)	3/11 (27%)
Midline Incision	17/29 (59%)	11/29 (38%)	1/29 (3%)	10/11 (91%)	1/11 (9%)	0
Midline incision closure	20/29 (69%)	9/29 (31%)	0	9/11 (82%)	2/11 (18%)	0

Table 2: Procedure Competency Rates among Year 4/5 Trainees, taking gynaecological exposure into account

	Year 4/5 No pure gynae job N=4			Year 4/5 1 year pure gynae job N=6		
	Competent	Direct Supervision	Not at all	Competent	Direct Supervision	Not at all
Diagnostic laparoscopy	4/4 (100%)	0	0	6/6 (100%)		
Laparoscopic Salpingectomy (ectopic)	3/4 (75%)	1/4 (25%)	0	6/6 (100%)	0	0
Laparoscopic Salpingostomy (ectopic)	2/4 (50%)	2/4 (50%)	0	6/6 (100%)	0	0
Laparoscopic Bilateral salpingoophorectomy	2/4 (50%)	1/4 (25%)	1/4 (25%)	6/6 (100%)	0	0
Lap Ovarian Cystectomy	**3/4 (75%)**	**0**	**1/4 (25%)**	**6/6 (100%)**	**0**	**0**
Total Laparoscopic Hysterectomy	0	1/4 (25%)	3/4 (75%)	2/6 (33%)	2/6 (33%)	2/6 (33%)
Total abdominal Hysterectomy	2/4 (50%)	1/4 (25%)	1/4 (25%)	6/6 (100%)	0	0
Vaginal Hysterectomy	2/4 (50%)	1/4 (25%)	1/4 (25%)	6/6 (100%)	0	0
Pelvic Floor Repair	2/4 (50%)	1/4 (25%)	1/4 (25%)	6/6 (100%)	0	0
Transobturator Tape	0	1/4 (25%)	3/4 (75%)	3/6 (50%)	3/6 (50%)	0
Midline Incision	4/4 (100%)			6/6 (100%)	0	0
Midline incision closure	3/4 (75%)	1/4 (25%)	0	6/6 (100%)	0	0

An attempt to assess competency levels for performing general gynaecological procedures approaching the end of the five year specialist registrar training scheme can be made by focussing on year four and five trainee responses. There were six trainees approaching the end of their scheme who had completed a pure gynaecology year. They all deemed themselves competent to perform all general gynaecological procedures listed, with the exception of trans-urethral tape procedures, for which only three out of six reported competency and three out of six reported the need for direct supervision. Only two out of six reported competency to perform a total laparoscopic hysterectomy. Year four and five trainees who had not completed a pure gynaecology year as part of their scheme displayed significantly lower competency rates for most of the procedures. This highlights the value of rotations with high surgical volume and exposure to a varied case load.

Our study did not address the future career plans of the individual trainees, specifically whether or not they wished to become feto-maternal specialists or whether they wished to perform general gynaecological procedures after achieving their CCST. To date, in Ireland, feto-maternal specialists are still required to provide gynaecology cover on call. It is difficult for this cover to be adequately provided unless they are competent in dealing with most gynaecological emergencies. Advanced surgical skills and a sound knowledge of pelvic anatomy are also required to deal with many obstetric emergencies including major obstetric haemorrhage, lower uterine segment incision extensions and vaginal lacerations. This may have implications in staffing rosters in the future. Operative exposure has decreased as a direct result of reduced working hours in compliance with the European Working Time Directive. This, along with the fact that many rotations involve six month placements as opposed to one year, makes it difficult for trainers to teach and pass on their surgical skills.

Changes in gynaecological practice over the past two decades have had major implications on skill acquisition for surgical training. Hysterectomy rates in Europe have shown a marked decline over this period.[1,2] This change in practice is multifactorial but the introduction of endometrial ablation and the levonogestrel-containing intrauterine devices (Mirena and Jaydess) are major contributing factors.

The way in which hysterectomy is performed is also changing. Laparoscopic hysterectomy has been found to be associated with reduced overall peri-operative complications, reduced estimated blood loss and shorter hospital stay compared to abdominal hysterectomy.[3]

A breakdown of hysterectomy by surgical route showed that in 2010, only 8% of hysterectomies in Ireland were performed laparoscopically, compared with 61% performed abdominally and 31% vaginally (HIPE Data). Comparatively, data from the FINHYST study show laparoscopic hysterectomy rates in Finland for 2006 were 32% versus 24% abdominally and 44% vaginal.[4] With the advancement of minimally invasive surgery, many women expect to have their procedure performed laparoscopically. This puts an onus on training schemes to meet this demand and provide trainees with the required level of expertise. Laparoscopic hysterectomy is technically demanding and the learning period may increase the risk of complications. It has been shown that surgeons who have performed over 30 laparoscopic hysterectomies have a significantly lower incidence of complications compared to those who have performed under 30.[5] There may also be medico-legal implications if open procedures are performed instead of laparoscopic procedures due to lack of surgical training. The practice of minimal access surgery

is increasing but advanced laparoscopic skills are still difficult to attain in many units. These results highlight the importance of dedicated gynaecological surgical training. Gynaecological surgical modules and surgical fellowships allow increased surgical exposure and these, along with surgical skills courses, animal laboratory and virtual reality training, all have an important role to play in the advancement of surgical skills and knowledge of pelvic anatomy.

Box trainers with either innate models or animal tissue were the first basic training simulators. Animal laparoscopy is widely used for skill enhancement. Operations on pigs are the gold standard for laparoscopic and open surgery despite the associated expense and ethical issues. The Virtual Reality Simulator offers different training tasks which mimic actions undertaken during surgery. When in use, the computer registers all movement and actions made, providing objective feedback on the performance of the trainee. This method of training has the advantage of the possibility of unlimited practice in a 3-dimensional possibly haptic-adapted scenario with the complete freedom to create different clinical scenarios and can be tailored to the individual needs of the trainee. Virtual reality simulation is not a substitute for experience in the operating theatre but it has been shown to reduce the time for novices to develop skills in a safe controlled environment.[6] Virtual reality simulators have been on the market for over ten years. Some of the newer models have incorporated haptic feedback, greatly improving the associated learning potential. These include LapSimGyn (Immersion Medical and Surgical Science Ltd.), Lap Mentor (Simbionix), Pro MIS (Haptica), Procedicus MIST (Mentice Medical), and VIRGY (Swiss Federal Institute of Technology).[7]

Virtual hysteroscopy with forced feedback and lately with simulated bleeding models has also arrived.[8,9] The Hysteroscopy AccuTouch system (Immersion Medical) is equipped with forced feedback simulating hysteroscopic procedures like cervical dilatation, endometrial ablation and removal of intrauterine lesions. The fluid management monitor tracks overload.

Increased constraints on time and resources and decreased patient availability for surgical training has created a demand for additional training methods to be incorporated into our training schemes. Practice may not make perfect but it will help to decrease surgical complications and improve patient outcomes.

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All the obstetric and gynaecology SpR trainees for taking the time to complete our survey.

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Gynaecology Training for Higher Specialist Trainees in Obstetrics and Gynaecology, a Personal View

Sir,

As a specialist trainee in Obstetrics and Gynaecology in Ireland, I wish to add some supportive information to reinforce the suggestion that the minimum time spent training in gynaecology be one year.

An important issue for all trainees in Obstetrics and Gynaecology in this country, and indeed globally, is the struggle to acquire a good standard of surgical competency in gynaecology. The total number of years spent on the higher specialist training programme equates to approximately 5 years. Rotations between hospitals/regions on the specialist register are typically changed over on a yearly basis, with a few exceptions. This means that theoretically if a trainee is employed in the one institution for a period of 12 months that the system would allow for the trainee to remain operating with the same trainer for that time period. As the scheme encompasses both obstetrics and gynaecology training, at least one year with a designated gynaecology theatre list should not infringe upon obstetrics experience. I am including an anecdotal synopsis of my own exposure to gynaecology in theatre and cases performed while working as a Specialist Registrar in the National Maternity Hospital. While working here I also had a full time clinical involvement in obstetrics, including antenatal clinics and covering labour ward sessions.

Favouring the argument for at least one year of operating in one centre, with one trainer for higher specialist trainees, is my experience as a 3rd year higher specialist trainee in obstetrics and gynaecology. Over a consecutive 12 month period at the National Maternity Hospital, 2013-2014, only 50% of theatre sessions were attended by me due to annual leave (consultant and my own) EWTD, having time off pre and post call (which was avoided if at all possible)and also where there was no unscheduled leave of absence. Attending one operating list a week the cases included 7 abdominal major cases, 8 vaginal hysterectomies and 14 vaginal repairs.

This is a very basic and probably inadequate number of major procedures for a specialist trainee. In our view (myself and my trainer) the minimum amount of time for attachment to a unit should be one year, not forgetting that the trainer needs to establish a rapport with the trainee.

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Review of Time to Surgical Decompression in Traumatic Spinal Cord Injured Patients

E Smith, A O'Reilly, K Synnott, S Morris, M Timlin. Ir Med J. 2015; 108: 265-7.

Question 1
The number of spinal injury patients in the study was

a) 102
b) 104
c) 106
d) 108
e) 110

Question 2
The period studied was

a) 1 year
b) 2 years
c) 3 years
d) 4 years
e) 5 years

Question 3
The mean patient age was

a) 41.4 years
b) 42.4 years
c) 43.4 years
d) 44.4 years
e) 45.4 years

Question 4
The median time between onset of injury and arrival at the local hospital

a) 1 hr:15mins
b) 1hr:20mins
c) 1hr:25 mins
d) 1hr:30 mins
e) 1hr:35mins

Question 5
The median time interval between onset of injury and surgical intervention was

a) 25 hours
b) 27 hours
c) 29 hours
d) 31 hours
e) 33 hours

Evaluation of Presenting Symptoms and Long-Term Outcomes of Patients Requiring Excision of a Transobturator Tape (TOT)

JC Forde, NF Davis, TA Creagh. Ir Med J. 2015; 108: 270-2.

Question 1
The number of transobturator (TOT) procedures in the study was

a) 222
b) 224
c) 226
d) 228
e) 230

Question 2
The number of patients requiring removal of eroded mesh was

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

Question 3
The mean time to re-presentation was

a) 12.5 months
b) 14.5 months
c) 16.5 months
d) 18.5 months
e) 20.5 months

Question 4
The mean age of the patients needing excision of the mesh was

a) 42.8 years
b) 44.8 years
c) 46.8 years
d) 48.8 years
e) 50.8 years

Question 5
Following removal of the eroded tape-mesh the number of patients who did not require any further surgery was

a) 3
b) 5
c) 7
d) 9
e) 11

Patients Hospitalised with an Acute Exacerbation of COPD: Is There a Need for a Discharge Bundle of Care?

C Migone, M O'Connor, E Kelly, TJ McDonnell. Ir Med J. 2015; 108: 273-5.

Question 1
The number of acute exacerbations of COPD (AECOPD) studied was

a) 168
b) 170
c) 172
d) 174
e) 176

Question 2
The median age of the patients was

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

Question 3
The proportion of patients given advice regarding influenza vaccination was

a) 13%
b) 15%
c) 17%
d) 19%
e) 21%

Question 4
The proportion referred for pulmonary rehabilitation

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

Question 5
The proportion of patients who had their inhaler technique checked was

a) 51.2%
b) 53.2%
c) 55.2%
d) 57.2%
e) 59.2%

KEY DATES FOR 2014 TAX RETURNS

Pay + File Deadline: 31st of October 2015
Online Deadline: 12th of November 2015

Those who wish to save for retirement in the most tax-efficient way should consider making a pension contribution prior to the deadline.

IMO Financial Services has the expertise to ensure that you are making contributions into the correct type of pension plan to suit your circumstances and maximise your tax relief.

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- **Pensions for private income**
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Email: **imofs@imo.ie**
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