Issue 05/11

Newspaper post

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PRESENTATION: Onbrez Breezhaler 150mcg and 300mcg inhalation powder hard capsules containing indacaterol maleate, and separate Onbrez Breezhaler inhaler. **INDICATIONS:** For maintenance bronchodilator treatment of airflow obstruction in adult patients with chronic obstructive pulmonary disease (COPD). **DOSAGE AND ADMINISTRATION:** Recommended dose is the inhalation of the content of one 150mcg capsule once a day, administered at the same time of the day each day, using the Onbrez Breezhaler inhaler. Capsules must not be swallowed. Dose should only be increased on medical advice. The inhalation of the content of one 300mcg capsule once a day has been shown to provide additional clinical benefit with regard to breathlessness, particularly for patients with severe COPD. Maximum dose is 300mcg once daily. No dose adjustment required in elderly patients, for patients with mild and moderate hepatic impairment or for patients with renal impairment. No data available for use in patients with severe hepatic impairment. No relevant use in the paediatric population. If a dose is missed, the next dose should be taken at the usual time the next day. **CONTRAINDICATIONS:** Hypersensitivity to the active substance, to lactose or to any of the other excipients. **WARNINGS/PRECAUTIONS:** *Asthma:* •ONBREZ BREEZHALER SHOULD NOT BE USED IN ASTHMA. *Paradoxical bronchospasm:* • If paradoxical bronchospasm occurs Onbrez Breezhaler should be discontinued immediately and alternative therapy substituted. **Deterioration of disease:** •Not indicated for treatment of acute episodes of bronchospasm, i.e. as rescue therapy. **Systemic effects:** •Indacaterol should be used with caution in patients with cardiovascular disorders (coronary artery disease, acute myocardial infarction, cardiac arrhythmias, hypertension), in patients with convulsive disorders or thyrotoxicosis, and in patients who are unusually responsive to beta2-adrenergic agonists. **Cardiovascular effects:** •Indacaterol may produce a clinically significant cardiovascular effect in some patients as measured by increases in pulse rate, blood pressure, and/or symptoms. ECG changes. In case such effects occur, treatment may need to be discontinued. *Hypokalaemia:* • Beta2-adrenergic agonists may produce significant hypokalaemia in some patients, which has the potential to produce cardiovascular effects. In patients with severe COPD, hypokalaemia may be potentiated by hypoxia and concomitant treatment •which may increase the susceptibility to cardiac arrhythmias. *Hyperglycaemia:* •Inhalation of high doses of beta2-adrenergic agonists may produce increases in plasma glucose. Upon initiation of treatment with Onbrez Breezhaler plasma glucose should be monitored more closely in diabetic patients. •During clinical studies, clinically notable changes in blood glucose were generally more frequent by 1.2% on Onbrez Breezhaler at the recommended doses than on placebo. Onbrez Breezhaler has not been investigated in patients with not well controlled diabetes mellitus. Pregnancy and Lactation: •No data available from the use of indacaterol in pregnant women. Onbrez Breezhaler should only be used during pregnancy if the expected benefits outweigh the potential risks. •Not known whether indacaterol / metabolites are excreted in human milk. A decision must be made whether to discontinue breast-feeding or discontinue Onbrez Breezhaler therapy, taking into account the benefit of breast-feeding for the child and the benefit of therapy for the woman. **INTERACTIONS:** •Concomitant administration of other sympathomimetic agents may potentiate the undesirable effects of Onbrez Breezhaler. 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Where required, cardioselective beta-adrenergic blockers should be preferred, although they should be administered with caution. •Inhibition of the key contributors of indacaterol clearance, CYP3A4 and P-gp, does not raise any safety concerns given the safety experience of treatment with Onbrez Breezhaler. •Indacaterol has not been shown to cause interactions with co-medications. **ADVERSE REACTIONS:** •The most common adverse reactions with Onbrez Breezhaler are: nasopharyngitis, upper respiratory tract infection, sinusitis, diabetes mellitus and hyperglycaemia, headache, ischaemic heart disease, cough, pharyngolaryngeal pain, rhinorrhoea, respiratory tract congestion, muscle spasm, peripheral oedema. •Uncommon: paraesthesia, atrial fibrillation and non-cardiac chest pain. •Please refer to SmPC for a full list of adverse events for Onbrez Breezhaler. **LEGAL CATEGORY: POM PACK SIZES:** Onbrez Breezhaler 150mcg - carton containing 10 or 30 capsules and one Onbrez Breezhaler inhaler. Onbrez Breezhaler 300mcg - carton containing 30 capsules and one Onbrez Breezhaler inhaler. **MARKETING AUTHORISATION HOLDER:** Novartis Europharm Limited, Wimblehurst Road, Horsham, West Sussex, RH12 5AB, United Kingdom. **MARKETING AUTHORISATION NUMBERS:** EU/1/09/593/001, 002, 007. **Please refer to Summary of Product Characteristics (SmPC) before prescribing.** Full prescribing information is available on request from Novartis Pharma Services Inc, Representative Office Malta P.O Box 124, Valletta, VLT 1000 Malta. Tel: +356 22983217. 2011-MT-02-ONB-027-Apr-2011

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Breeding of PIGS

A pig is defined as '*any of the animals in the genus Sus, within the Suidae family of even-toed ungulates*' by Wikipedia. I could have searched the definition in a possibly more scholarly dictionary but I doubt that the meaning would have changed much. However what is possibly of interest to you readers is another meaning, and no, I am not referring to Pink Floyd's musical adaption. PIGS was coined by bank analysts to refer to Portugal, Italy, Greece and Spain. Nowadays each letter could well refer to other countries such as Ireland but at the time of coining, well, it referred to these aforementioned countries. Obviously the connection between these countries goes beyond the fact that all four countries form part of the Eurozone countries of southern Europe. To put it simply, all were and are still facing financial woes. Nothing new with that, you would say. We are all too familiar with Lehman Brothers, Merrill Lynch, AIG and images of other apocalyptic horsemen wearing suits and clutching bank notes in their right hand (and souls in their left, for the church goers), bearish markets, double-dip recessions and so forth, so I will not delve further into this.

The pharma field is no spectator. Storms of economic crises have indeed heralded cost-containment measures and these include the closure of regional offices and laying off of several thousand employees, possibly through consolidations. Here in Malta, where we are constantly being bombarded with images of the Smart City, Corporate villages and Sports complexes it would seem that these storms are buffered into a pleasant summer breeze. If we were to perceive the world through the eyes of local media, only the occasional transfer of specific medicinal products from one agent to another would seem to hint that abroad … far away from our shores … in distant lands … consolidations are being done with all their aftermaths. However reality has it that unfortunately locally we have also had pharma lay-offs.

During financial meltdowns, in addition to tha above, pharma companies also tend to decrease their R&D expenditure, possibly also because it is becoming increasingly difficult to find new blockbusters, be it a new moiety or not. So pharma companies nowadays tend to focus more on registering new line extensions to their existing marketed products and extending their patents. As a result, if R&D expenditure is cut, new drugs and treatments are not explored.

Even governments have to pull up their sleeves and nip and tuck their various expenditures in a selective way. University funding and healthcare expenditure will undoubtedly be in the limelight. This could mean that less scholarships are made available or that selectively, healthcare services and medicines are no longer provided for free to patients. Probably for Malta this would not be the case because of the Tom-and-Jerry tactics by the main political parties, considering the upcoming general election. However it would certainly mean that new therapies, possibly available abroad, will not be made freely available to the general public in a timely manner.

So even if scientists actually manage to acquire enough funds to indeed discover a new life-saving drug, the next bottleneck would be governments which will not have enough funding to get the medicine for its patients. One way or another patients would be barred from possibly getting life-saving medication or therapies.

Unfortunately an economic crises of any country is effectively brought about by people, me and you, possibly motivated by money and power. However once one country is in financial trouble, it seems that it is likely to spread like a drop of ink on blotting paper, dragging other neighbouring countries' economies in the eye of the storm. And as discussed, this will inevitably affect negatively all sectors. However one must also realise that most importantly those who will suffer most are the vulnerable people, including the paediatric population, elderly, those who are mentally or physically challenged, etc .... and I guess it is very easy for me and you to fall into one of these categories some day or another. So it is very important to realise that our actions might actually backfire onto us or our loved ones. And in such case, believe you me, neither money nor power will secure a non-existent treatment or medication!

Ian C Ellul

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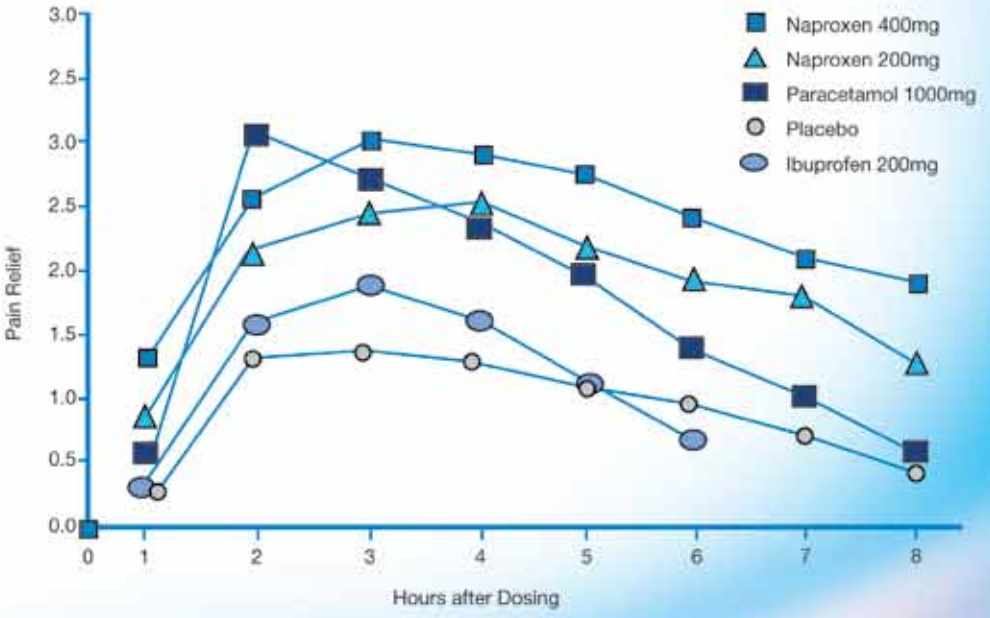

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contents

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COVER: Tragopogon hybridus (Lehjet il-Bodbod; Hairless Goatsbeard)

The plant which is indigenous to the Maltese islands has attractive pale pink or mauve flowers that only open for a few hours in the morning and then close by midday. Each flower is surrounded by long, narrow green bracts, and the leaves of the plant, also long and narrow, resemble grass, which makes the plant an unlikely member of the daisy family (Asteraceae). The seed heads resemble a giant dandilion clock and are often rather more noticable than the flowers themselves. It flowers in April and May

Photography: Guido Bonett ARPS AMPS

Maximising ophthalmic theatre time - Part I

PAOLA BONANNO
MARIA AGIUS
FRANCO MERCIECA

Abstract

Aim: To establish whether the available ophthalmic theatre time is being used efficiently and to find ways how to improve our surgical output and reduce the waiting list.

Methods: All ophthalmic surgeries under the care of Mr Franco Mercieca carried out in Theatre 13 in the sample months of May and October 2009, were retrospectively analyzed. Average times were estimated for all types of ophthalmic procedures. The total number of cataract operations and patients listed for surgery were noted from beginning of 2006 till end of 2009.

Results: In 2009, this firm has carried out 572 cataract operations, 81% increase from 2008, of which 52% were performed on weekends and public holidays. The theatre usage time in the sample months under study was 89.25% on weekdays and over 94% on extra sessions. Theatre time wastage was an average of 8%, half of which being due to cancellations on the day. On average over 71% of our theatre time is used for cataract surgery.

Conclusions: In order to maximize our theatre time efficiency, we need to set up a Preoperative Assessment clinic and encourage more patients to have their surgery under local anaesthesia. To reduce the waiting list the need for a parallel theatre dedicated solely to cataract surgery under local anaesthesia is of paramount importance.

Key words: Local Anaesthesia, Pre-Operative Assessment Clinic, Theatre Time

Introduction

There is currently much talk among patients, healthcare workers and politicians about the long waiting list for cataract surgery at Mater Dei Hospital (MDH). The way patients are affected by the waiting time for this surgery has important clinical, public health and health policy consideration.

During the past decade, phacoemulsification has largely replaced large incision extra-capsular cataract extraction. The phaco incision is small and self-sealing allowing the surgery to be completed without sutures. This provides rapid visual rehabilitation, better wound stability and excellent post-operative astigmatic control.[1-4] Cataract surgery has a low complication rate and is a relatively quick procedure (Refer to Table 1) with the majority of surgeries being done under local anaesthesia. All this is generating considerable improvement in the quality of life of patients who are treated. The demand for the surgery is therefore high and the Ophthalmology Department at MDH, given the constraints of limited resources, continuously struggles to meet these demands.

Table 1: Average duration of ophthalmic surgeries. Abbreviations: LA – Local Anaesthesia; GA – General Anasthesia; I&C Chalazion - Incision and curettage Chalazion

Procedure	Time (mins)
Cataract – LA	25
Cataract – GA	45
Trabeculectomy – LA	25
Trabeculectomy – GA	45
Squint Surgery – GA	45
Retinal Detachment Surgery – GA	45-60
Repair of Perforation – GA	45-50
Excision of Pterygium + Graft – LA	30
I&C Chalazion – GA	20
Excision of Conjunctival Lesion – LA	20
Needling – LA	10
Intravitreal Injections	10
Aspiration of Soft Lens Matter – GA	30
Upper Lid Recession – GA	45
Turnover time	2

Almost everyday from Monday to Sunday at Mater Dei Hospital there is a cataract surgery list. Yet this does not seem to be enough to meet the demands

The number of cataract surgeries performed in Malta increased by almost 44% in 2009 when compared to the number performed in 2008.[5] This was achieved by better usage of available theatre time and by performing extra lists on weekends and public holidays.

Almost everyday from Monday to Sunday at Mater Dei Hospital there is a cataract surgery list. Yet this does not seem to be enough to meet the demands and the waiting list remains very long.

Aim

The aim of this audit is to establish whether the available ophthalmic theatre time is being used efficiently and to determine ways how this may be improved in order to decrease the cataract waiting list.

Method

All the elective and emergency major ophthalmic surgeries under the care of Mr. Franco Mercieca that were listed on the register of Ophthalmic Theatre 13 in the months of May 2009 and October 2009 were retrospectively surveyed. These months were chosen to make up for any seasonality factors and to make the assessment on two independent points in time in the same year.

All ophthalmic surgeries carried out in the adjacent theatre 15 were excluded from this study since these were all minor operations including mainly various lid procedures and intravitreal injections.

The theatre time allocated to the firm is every Monday between 8.30am and 2.00pm. Extra theatre time is used optionally on Saturday and/or Sunday of any week when the respective consultant is on-call. The theatre time used on these days is between 8.30am and 12.30pm.

For the purpose of this study a case was considered to have started at the point in time when the patient is wheeled into the Operating Theatre (OT) and ended once the patient has been wheeled out. The average times estimated in this research include the following steps: Wheeling in the patient to the OT, checking patient details/ file, checking intraocular lens (IOL) power (where applicable), lying patient on operating table, administration of anaesthesia (whether local or general), scrubbing, draping, operating time, removal of drapes, reversal of anaesthesia (in the case of general anaesthetic), and eventual wheeling out of patient from OT. Turnover time – the time interval between the end of one case and the beginning of the next one – is not included in the estimates for each procedure. Table 1 indicates the average duration of the procedures. The table distinguishes the average operating time for surgeries performed either under Local Anaesthetic (LA) or General Anaesthetic (GA).

Note was also taken of the number of cataract surgeries that were cancelled on the day of the procedure and the reason of cancellations. The monthly total number of cataract performed and those booked on the waiting list from Ophthalmic Outpatients for the period between January and December 2009 was obtained from a network database available to the ophthalmic theatre nurse in charge. This data was compared to the preceding years till 2006.

Table 2: Operating theatre time available

Allocated operating hours	38.5 hrs
Extra operating hours	32 hrs
Total operating hours	70.5 hrs

Results

Operating Time availability

Table 2 highlights the operating time available to the firm under study during the research period including the regular time allocated and the additional optional hours used by the operating consultant. The number of regular operating days available in the

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period under study was of 7 (Mondays in the months under study) while the number of optional operating days used by the operating consultant was 8 (Saturdays and/or Sundays in the months under study).

Allocation of Operating Time

An important consideration for this study is the fact that while much importance is given to the cataract surgery waiting list in the media and amongst the administration, the operating theatre time has also to be used for other ophthalmic surgeries. In the data presented below in table 3.0 we analyse the share of operating time allocated between Cataract surgeries and other surgeries. One will note that circa 6% of the operating time available is wasted in necessary Turnover Time.

This data clearly indicates that the majority of the available operating theatre time – whether during allocated hours and extra hours – is dedicated to cataract surgeries, as shown in Table 3.1. In fact from these sample months, on average 71% of the total available theatre time is used for cataract surgery. While in the allocated theatre time this amounts to 64%, the percentage usage time for cataract surgery goes up to 81% during weekends or public holidays.

The 'Other'/Un-utilised time shown in Table 3.1 represents the remaining theatre time which was could not be availed of or because it was used up for various other activities. This amounts to an average of 8% of the total available theatre time. Up to 4.7%, which amounts to around 3.3 hours, was not utilised due to last minute cancellations which was equally distributed between patients not turning up for surgery or found to be medically unfit on the day. The remaining 3.3% of this theatre time was taken up by complicated surgery, teaching ophthalmic surgery to juniors or delay in bringing patients from ward.

Surgeries performed vs Patients added to waiting list

An important aspect of this study is the understanding of the number of new patients added to the waiting list for cataract surgery in contrast with the surgeries being performed with a view

Table 3.0: Efficiency of use of operating time available. Abbreviations: SLM – Soft Lens Matter; MMC – Mitomycin C

	Allocated Hours (May & Oct 2009)		Extra Hours (May & Oct 2009)	
	Surgeries (n)	Operating Time (Hours)	Surgeries (n)	Operating Time (Hours)
Aspiration of SLM	1	0.5		
Cataracts	58	24.5	62	25.83
Perforation Repair	1	0.75	1	0.833
Excision Conj Lesion + MMC	1	0.33		
Incision & Curettage Chalazion	1	0.33		
Kenalog Intravitreal Injection	1	0.167		
Needling post trabeculectomy	1	0.167	1	0.167
Pterygium Excision + Graft	1	0.5	1	0.75
Retinal Detachment Surgery	1	1		
Squint Surgery	1	0.75		
Trabeculectomies	5	2.417	2	0.833
Turnover time	66	2.2	59	1.97
Upper Lid Recession	1	0.75		
Used Operating Time		34.361		30.383
Un-utilised Time		4.139		1.617
Total Available Time		38.5		32
Efficiency ratio		*89.25%*		*94.95%*

Table 3.1: Allocation of operating time - original article

	Allocated Hours (May & Oct 2009)		Extra Hours (May & Oct 2009)	
	% usage Theatre Time used	Time (Hours)	% usage Theatre Time used	Time (Hours)
Cataracts performed	64	24.5	81	25.83
Other surgeries	20	7.661	8	2.583
Turnover time	6	2.2	6	1.97
Un-utilised time	11	4.139	5	1.617
Total		*38.5*		*32*

This data clearly indicates that the majority of the available operating theatre time – whether during allocated hours and extra hours – is dedicated to cataract surgeries

Figure 1: Comparison of Cataract surgeries performed and number of new patients added to Cataract surgery waiting list

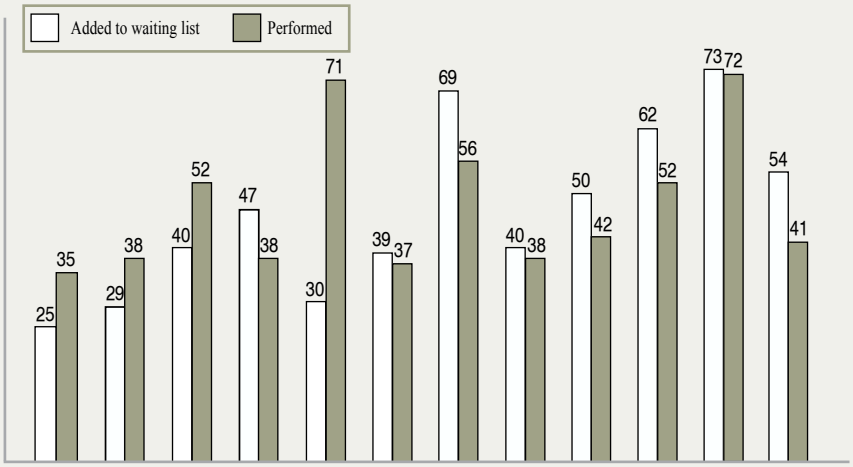


Figure 1.1: Comparison of cataract surgeries performed in allocated theatre time with those performed during extra theatre time between 2006 and 2009

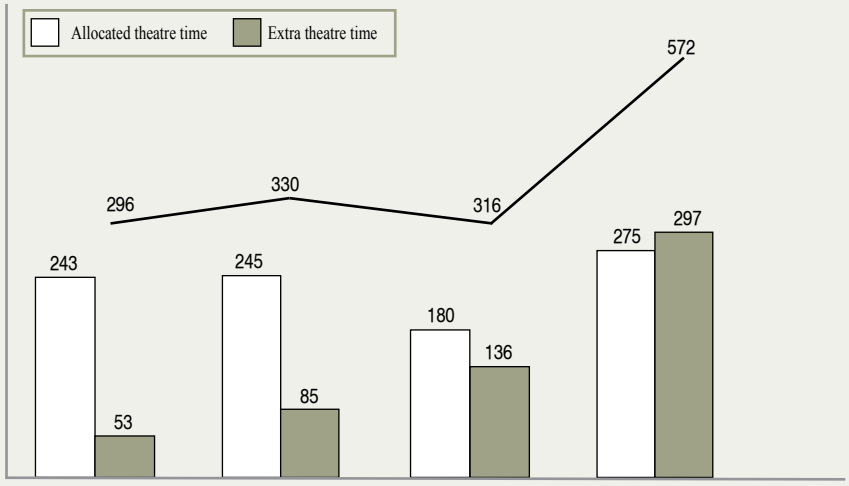
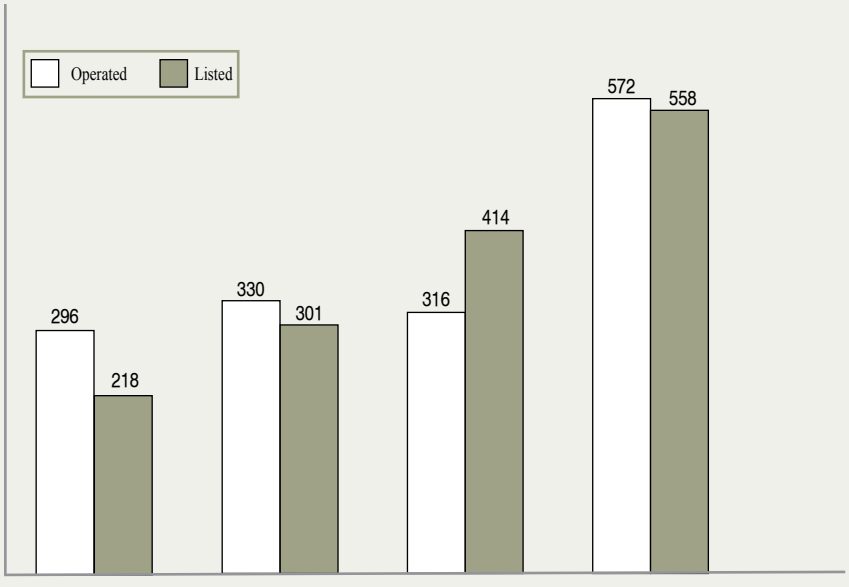


Figure 1.2: Cataract surgeries listed and performed between 2006 and 2009



The percentage of the cataracts performed during extra theatre hours out of the total performed has increased exponentially

to reduce the number of patients on such list. Figure 1.0 below shows this comparison for the 12 months under study. It does not necessarily reflect the impact on the total waiting list but gives an indication of the regular number of new patients added to the waiting list month on month. Therefore in total 558 patients were listed for cataract surgery and 572 were operated on in 2009 under the care of Mr Franco Mercieca.

When compared to previous years, in 2009 there was a significant increase in the number of cataracts performed, as seen in Figure 1.1 with the main contribution being the work performed on weekends or public holidays. The percentage of the cataracts performed during extra theatre hours out of the total performed has increased exponentially from a mere 18% in 2006 to 52% in 2009. In 2008 we had a dip in total number of cataract surgeries performed (316 vs. 330 in 2007).

Figure 1.2 shows the number of patients who were listed for cataract surgery from 1st January 2006 till 31st December 2009 This illustration clearly shows how the demand for surgery has progressively increased over the three years analyzed.

to be continued

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Five steps to reducing the burden of COPD

An older person with a long history of smoking, persistent dyspnoea and sputum production, who struggles to manage daily activities typifies the COPD patient. Ultimately, most COPD patients will need maintenance therapy with bronchodilators and anti-inflammatory agents.[1] Periodically, patients experience distressing and potentially life-threatening exacerbations of their COPD,[1] most of which are caused by infection in the already inflamed and injured lung and each exacerbation amplifies the permanent lung damage.[2] About 50% of infective exacerbations are bacterial in origin.[3]

Managing COPD involves difficult lifestyle changes for the patient; and preventive, maintenance and curative treatments managed by the physician.

Step 1: Help patients to help themselves

Smoking cessation is the single most effective means of preventing the development of COPD and slowing disease progression.[1] Chronic cough and sputum production are often evident years before the development of airway obstruction and smoking cessation at this early stage could prevent patients developing COPD. However, with early COPD symptoms seeming relatively minor, the need to stop smoking may not be obvious to patients. Patient education, counselling and medications to counter nicotine dependence are key at this stage.[1]

COPD-associated breathlessness often leads patients to become immobile and unfit; possibly resulting in sputum thickening and further congestion. Measures including exercise and diet modification can relieve dyspnoea and fatigue, improve emotional function, and enhance patients' sense of control over their condition.[1,4]

Patient education should include how to recognise exacerbations, and the need to seek immediate treatment.[1] Prompt therapy provides symptomatic relief, minimises lung damage and allows accurate recording of the annual number of exacerbations, facilitating assessment of risk for further exacerbations.

Step 2: Actively reduce risk factors through immunisation

The influenza vaccine can reduce serious illness and death by about 50% in vulnerable COPD patients.[1] Viral lung infections may increase the likelihood of secondary bacterial chest infections.[5] Therefore, COPD patients should be a priority group for influenza vaccination.[1,6]

While the evidence for the efficacy of pneumococcal vaccines is not as strong as that for influenza vaccines, it should still be considered in patients at high risk of pneumococcal disease, i.e. those ≥65 years of age, in residential care, or with chronic liver disease, diabetes mellitus, functional or anatomic asplenia, or chronic cerebrospinal fluid leakage.[1,6]

Step 3: Optimise maintenance therapy

Optimising maintenance therapy slows the underlying lung function decline and provides symptomatic relief for patients. Such treatments include beta-agonists, anticholinergics, methylxanthines and inhaled and systemic glucocorticosteroids.[1,6] Each tends to be added successively as the underlying disease worsens, so periodic medication reviews are useful in assessing treatment efficacy and/or the requirement for further medication, including long-term oxygen therapy.

Step 4: Focus preventive care on patients most likely to experience an exacerbation

Patient factors are good indicators of future exacerbation frequency.[1,2,7,8] Characteristics associated with high exacerbation frequency are age ≥65 years, more than three exacerbations in the previous 12 months, concomitant cardiac disease, poor lung function (post-bronchodilator forced expiratory volume in 1 second [FEV1] ≤50% predicted) or requirement for antibiotics in the last three months.

Once at-risk patients have been identified, consideration should be given to preventive and therapeutic measures to reduce exacerbation frequency.[9]

Step 5: Manage exacerbations quickly and effectively

Curing the current COPD exacerbation and minimising the risk of a subsequent exacerbation are important therapeutic goals.[9] Currently, the mainstay of treatment for exacerbations are antibiotics with or without systemic glucocorticosteroids, plus possible intensification of long-term respiratory medications e.g. inhaled beta-agonists.[10]

Antibiotic therapy should be restricted to patients with a high likelihood of a bacterial exacerbation; exacerbations with other causes should be treated symptomatically.[1] The decision to use an antibiotic can be made based on symptoms, as patients with a COPD exacerbation typically have at least one of the following: increased dyspnoea, or increased sputum volume or purulence.[11] Patients with only one symptom (Anthonisen type III) are likely to have mild, self-limiting disease and do not require antibiotics. Those with two or three symptoms (Anthonisen type II and I patients), particularly those with purulent sputum[6] are likely to have more severe exacerbations and require antibiotic treatment. Sputum colour can also help to distinguish between bacterial and non-bacterial exacerbations; green (purulent) sputum indicates a higher likelihood of bacterial infection.[12]

For a good clinical outcome, the antibiotic chosen should rapidly and effectively kill the bacteria likely to have precipitated the exacerbation (in COPD these are *Streptococcus pneumoniae*, *Haemophilus influenzae* and *Moraxella catarrhalis*) .[1,6] Using a short course of antibiotics wherever possible reduces the likelihood of resistance developing.[13]

MAESTRAL: A new approach to AECOPD (Acute Exacerbations of COPD) studies

The international MAESTRAL (moxifloxacin in AECBs trial) study[14] uses a new approach to measure the efficacy of two antibiotics (moxifloxacin and amoxicillin/clavulanic acid) against exacerbations in patients with moderate-to-severe COPD.

The study design[15] has been developed to overcome several shortcomings of previous trials in terms of patient selection, choice of endpoint and accurate clinical assessments. To prevent inconsistencies in assessments of clinical outcomes, all clinical failures have been assessed by a blinded Data Review Committee to independently confirm the primary clinical outcome.

The results of the MAESTRAL study will be distributed shortly and it is hoped that they will answer some of the questions on the most appropriate way to manage AECOPD.

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Introducing the 2nd Generation SMS4Health services

The introduction of a reminder system for the purposes of preventive health care provision in practice will result in increased patient satisfaction, better clinical outcomes and increased income to your practice.

Unfortunately, conventional reminder systems tend to involve a lot of repetitive administrative work and this has always been a barrier to the adoption of such services in practice.

With mobile telephony penetration rate close to 100%, mobile telephony is the ideal communication vehicle for health-related reminders from healthcare providers to patients.

SMS4Health is an SMS-based, completely automated recall system which sends out regular reminders to subscribers based on your recommendations.

SMS4Health is a useful tool in clinical practice for many specialties.

Family Practice

SMS4Health can be used in both Primary Prevention (routine checkups, cervical smears, vaccinations etc) as well as Secondary Prevention such as the management of chronic medical conditions like diabetes and hypertension.

Using SMS4Health in family practice improves uptake of preventive health checks, vaccinations, control of chronic conditions such as diabetes and hypertension and can help in decreasing complications, morbidity and mortality.

Paediatrics

Using SMS4Health will assist professionals involved in child care to remind parents as to when their child is due for a whole range of vaccinations and stick to what is not uncommonly a complicated vaccination schedule besides reminding when the young ones are due for their well-baby checks.

Gynaecology

SMS4Health is extremely useful in obstetrics and gynaecology practice and current reminders include those for Well-women checks, Cevical Smears, HPV Vaccinations . Other reminders will also be made available to providers based on demand. Customized reminders may also be set up if required.

Dental Clinics

SMS4Health is also useful in dental practice for those who want to promote oral wellbeing. Currently we have set up reminders for Dental Checks, Follow-Up Bridge Work and Follow-Up Implants.

SMS4Health has been developed over several years and is proven to be effective tool. Patient acceptability and compliance have consistently been very high.

We have recently launched our second generation SMS4Health system. SMS4Health has an easy, intuitive interface and is completely web-based and the newly launched sms4health.com website integrates seamlessly with the service. SMS4Health is now also incredibly affordable with each message costing a fraction of the cost of using any other reminder system.

Users of sms4health.com can earn usage points by using sms4health.com and using the facilities offered. These usage points may in turn can be used to send free reminders.

We can provide any training and support necessary to get you started.

We can also set up other reminders based on demand and we can also set up customized reminders as may be required.

Whichever speciality you practice we have the right reminder system for you. So why wait! Join now by visiting www.sms4health.com and apply for your practice to become an SMS4Health Provider.

What is on for October for the Health Promotion and Disease prevention Directorate?

CHARMAINE GAUCI

The breast cancer awareness month is an annual international health campaign held throughout October to raise awareness on breast care. During this month the Health Promotion and Disease Prevention Directorate joins the rest of the world to encourage women to be breast aware. There are five simple steps:

- Know what is normal for your breasts;
- Know what to look and feel for;
- Look and feel;
- Report any changes to the doctor immediately;
- Attend screening when called for.

This awareness is for all women since breast cancer can affect any woman. However there are certain risk factors which increase the likelihood of developing breast cancer:

- Getting older – 80% of breast cancer cases are in postmenopausal women;
- Having a significant family history of breast cancer, which may be associated with inherited gene mutations;
- Having no children or women who have their first child later on in life;
- Starting your periods early or going through the menopause late;
- Certain types of hormone replacement therapy (HRT) used over a prolonged period;
- Being overweight;
- Drinking excess alcohol.

Wherever there are humans in action and possibly in pain, there will be Kinesio® Taping

Ever wondered what the bright-coloured strips of tape in odd patterns increasingly being seen on professional and recreational athletes are all about?

At this point, it would be hard to find a part of the world where there is no Kinesio Taping®. Exclusive distributors Pro-Health Ltd launched Kinesio® Tape in Malta, at a press conference held on Thursday 28th July at The Villa in Balluta Bay, St Julians. Guest speaker Mr Stefano Frassine , Kinesio® Tape trainer in Italy, explained the various benefits associated with these taping techniques both for pain and inflammation associated with musculoskeletal conditions, as well as its numerous applications in sports. The expert panel included Mr John Xerri de Caro, President of the Malta Association of Physiotherapists. Mr Xerri de Caro stressed upon the importance of Kinesio® taping being performed by Kinesio® trained and certified health professionals especially for the first few times before the individual starts doing self application. Dr Aaron Formosa, a Kinesio® certified Sports Medicine Specialist, spoke about his positive personal experiences with Kinesio® Taping in Maltese athletes and the advantages that this offers in a wide variety of sports.

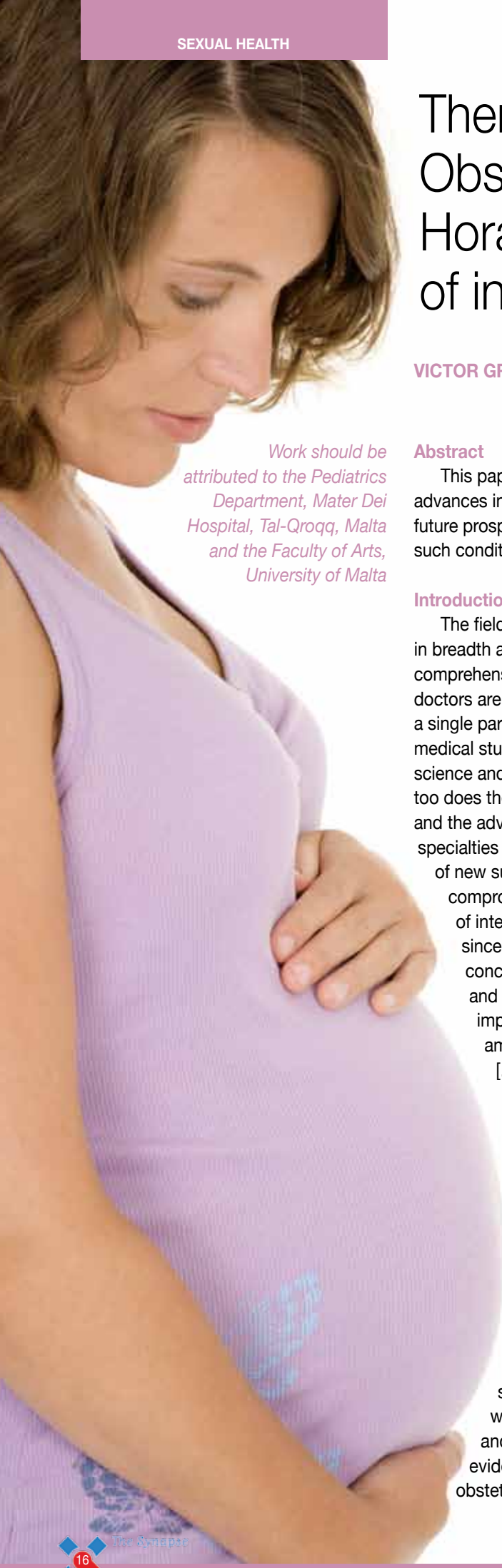
Developed in the 1970s in Japan by Dr Kenzo Kase, the tape and techniques have spread throughout the world fast.

Wherever there are humans in action and possibly in pain, there will be Kinesio® Taping. No wonder new world tennis no.1 Novak Djokovic, Serena Williams, the Real Madrid football team ,David Beckham and a multitude of other football stars, NBA Boston Celtic's Kevin Garnett, cycling's legend Lance Armstrong and many more top athletes use Kinesio® taping.

Besides its applications in sports, both on land and in the water, Kinesio® Tape has been used successfully for a multitude of conditions which include carpal tunnel syndrome, lower back strain and pain, knee conditions, shoulder conditions, hamstring, groin injury, rotator cuff injury, whiplash, tennis elbow, plantar fasciitis, patella tracking, pre and post surgical swelling, ankle sprains, athletic preventative method, and also just as a support or postural aid.

For further advice consult a Kinesio® certified physiotherapist or doctor. Kinesio Gold Tex Tape is available in leading pharmacies.

For info on Kinesio® products and upcoming Kinesio® training courses in Malta contact: Pro-Health Ltd 2146 2654, kinesio@prohealth.com.mt, Kinesio Malta Find us on Facebook



There are more things in Obstetrics and Gynaecology, Horatio, than are dreamt of in your Philosophy – Part I

VICTOR GRECH, CLARE THAKE-VASSALLO, IVAN CALLUS

Work should be attributed to the Pediatrics Department, Mater Dei Hospital, Tal-Qroqq, Malta and the Faculty of Arts, University of Malta

Abstract

This paper will review contemporary advances in fertility and sterility and future prospects for the treatment of such conditions.

Introduction

The field of modern medicine is vast in breadth and depth beyond individual comprehension, and mere mortal doctors are only capable of assimilating a single particular speciality in medical studies.[1] Moreover, as new science and technology evolves, so too does the practice of medicine and the advancement of its myriad specialties along with the inception of new subspecialities,[2] further compromising the possibility of interdisciplinary dialogue, since 'although the primary concerns, sources of evidence and concepts remain the most important nodes of difference among natural scientists, […] social scientists, and humanists, the three communities vary on […] additional dimensions'.[3]

The acquisition of knowledge and skills, and their continual update and upkeep, is coloured and complicated by diverse ethical and moral considerations, with doctors today performing seemingly contradictory work within their specialities, and nowhere is this more evident than in the field of obstetrics and gynaecology, where doctors may be asked to assist an infertile couple or to advise on contraception, to perform a sterilisation procedure such as a tubal ligation, or attempt to reverse the same procedure, and to assist in a birth, sometimes surgically, or to terminate a pregnancy. For example, radical decisions with regard to rendering oneself infertile, usually for contraceptive purposes, and later changing one's mind must be very common indeed as evinced by the sheer number of cases portrayed by Silber and Grotjan who reported vasectomy reversal in 4010 cases.[4]

To further complicate matters, these very different procedures may be carried out on the very same individual at different stages of the individual's life, with diverse ethical dilemmas.[5] This duality in role is simply a reflection of the varied and varying condition that is inherent in human nature, never perfect and never content.

Infertility and Sterility: Definitions and Overview

Virtually every significant scientific advance, medical progress included, gives rise to a new challenge for moral philosophy. Thus, while modern medical techniques have greatly enlarged and refined humanity's choices, decision-making by individuals becomes progressively more problematic. This is particularly evident in the field of infertility, a branch in medicine that is traditionally dealt with by specialists in obstetrics and gynaecology. Some definitional considerations would be appropriate at this stage, and the International Council on Infertility Information Dissemination

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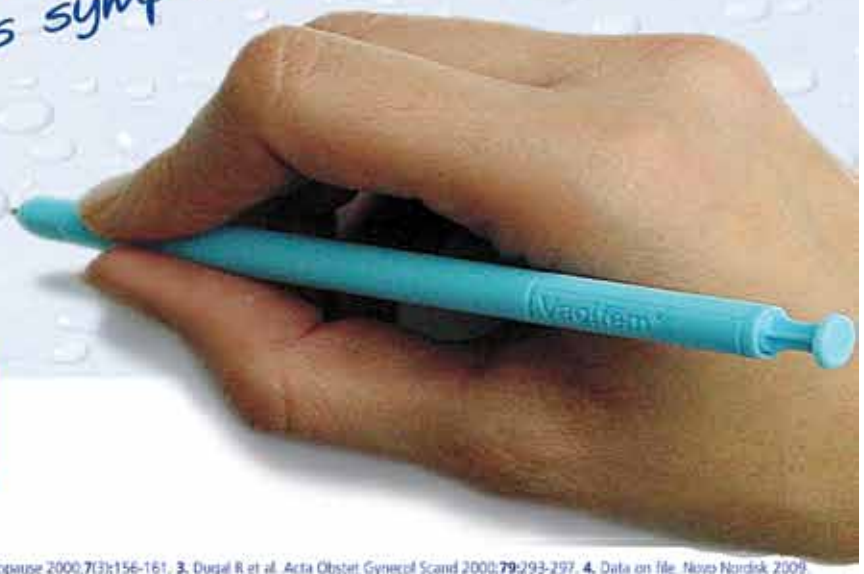

Sometimes it's the little things in life that make the biggest difference

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Abbreviated Prescribing Information Vagifem® Estradiol. **Presentation:** Vaginal tablet containing 25 micrograms estradiol. Each tablet is inset in a disposable applicator. **Uses:** Treatment of vaginal atrophy due to oestrogen deficiency. **Dosage and Administration:** Administered intravaginally using the applicator. The applicator is inserted into the vagina up to the end of the smooth part of the applicator and the tablet released by pressing the plunger. The applicator is then withdrawn and disposed of. Initial dose of 1 tablet daily for two weeks followed by maintenance dose of 2 tablets per week. **Contra-indications:** Known, past or suspected breast cancer; known or suspected oestrogen-dependent malignant tumours; undiagnosed genital bleeding; untreated endometrial hyperplasia; previous idiopathic or current venous thromboembolism (VTE); active or recent arterial thromboembolic disease; acute liver disease or history as long as liver function tests have failed to return to normal; hypersensitivity to ingredients; porphyria. **Precautions:** HRT should only be initiated for symptoms that adversely affect quality of life. Take personal and family medical history before initiation or reinstitution of therapy. Periodic check-ups are recommended. Physical examination if clinically indicated. Treat vaginal infections before initiation of Vagifem. Due to intermittent administration of low dose estradiol, low systemic exposure of estradiol is expected however being an HRT product the following need to be considered especially for long-term or repeated use of the product. Patients with: leiomyoma or endometriosis; a history of, or risk factors for, thromboembolic disorders; risk factors for oestrogen-dependent tumours; hypertension; liver disorders; diabetes mellitus with or without vascular involvement; cholelithiasis; migraine or severe headache; systemic lupus erythematosus; a history of endometrial hyperplasia; epilepsy; asthma; otosclerosis; should be monitored carefully as HRT may exacerbate these conditions. Discontinue if contraindication discovered or if the following occur: jaundice or deterioration in liver function; significant increase in blood pressure; new onset of migraine-type headache; pregnancy. The risk of endometrial hyperplasia and carcinoma is increased when systemic oestrogens are administered alone for prolonged periods. The endometrial safety of long term/repeated use of topical vaginal oestrogens is uncertain; if repeated, treatment should be reviewed at least annually with special consideration given to symptoms of endometrial hyperplasia or carcinoma. Bleeding or spotting appearing at any time on therapy should be investigated. Caution is advised in using this product in women who have undergone hysterectomy because of endometriosis as unopposed oestrogen may lead to premalignant or malignant transformation in the residual foci of endometriosis. Vagifem is a local low dose preparation, therefore the occurrence of the following conditions is less likely than with systemic oestrogen treatment; Clinical trials and epidemiological studies report an increased risk of breast cancer in women taking HRT for several years. Risk becomes apparent within a few years of use and increases with duration of intake but returns to normal within a few (at most five) years of stopping treatment. Relative risk greater when progestogen added, either sequentially or continuously. HRT increases density of mammographic images. Systemic HRT is associated with a higher relative risk of developing VTE especially in first year of use. HRT should be viewed as contraindicated in patients with personal or family history of thromboembolism or recurrent spontaneous abortion until thorough evaluation of thrombophilic factors made. Carefully consider benefit-risk of use of HRT in women on anticoagulant treatment. Give scrupulous attention to prophylactic measures to prevent VTE following surgery. Consider temporarily stopping HRT four to six weeks prior to surgery if prolonged immobilisation expected; do not restart until woman completely mobilised. Discontinue HRT if VTE develops during treatment. No evidence for cardiovascular benefit with HRT. Evidence for increased risk of ischaemic stroke with continuous combined CEE and MPA; not known whether this extends to other HRT products. Long-term (at least 5-10 years) use of oestrogen-only HRT associated with increased risk of ovarian cancer; not known if this applies to combined HRT. Oestrogens may cause fluid retention, monitor patients with cardiac or renal dysfunction. Closely observe patients with terminal renal insufficiency. Closely follow women with pre-existing hypertriglyceridaemia for rare cases of large increases of plasma triglycerides leading to pancreatitis. Oestrogens increase thyroid binding globulin and other binding globulins and serum proteins; the effect is less pronounced than with oral. No conclusive evidence that HRT improves cognitive function. Some evidence that continuous combined CEE and MPA increased risk of probable dementia in women who started HRT after age of 65; not known if this applies to younger women or other HRT products. ***Pregnancy and lactation:*** Not indicated. ***Side Effects:*** Most frequently reported adverse drug reactions are vaginal discharge and vaginal discomfort. Breast pain, peripheral oedema and postmenopausal bleedings most likely occur at the beginning of treatment. Other adverse events reported are: Common: headache, nausea, abdominal pain, distension or discomfort, dyspepsia, vomiting, flatulence, genital candidiasis or vaginitis, vaginal haemorrhage, vaginal discharge or discomfort, breast oedema or enlargement, breast pain or tenderness, oedema peripheral. Very rare: Breast or endometrial cancer, hypersensitivity, insomnia, depression, aggravated migraine, DVT, diarrhoea, urticaria, rash (erythematous, pruritic), general pruritis, endometrial hyperplasia, vaginal pain or irritation, vaginismus, vaginal ulceration, fluid retention, ineffective drug, weight gain, increase in blood oestrogen, NOS. Other side effects reported in association with other oestrogen treatment: myocardial infarction, stroke, gallbladder disease, skin and subcutaneous disorders (chloasma, erythema multiforme, erythema nodosum, vascular purpura, pruritus), endometrial cancer or hyperplasia or increase in size of uterine fibroids, probable dementia. 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(INCIID) considers a couple to be infertile (or subfertile) if they have not conceived after a year of unprotected intercourse in women under 35 years of age, or after six months in women over 35 years of age, and in women who are incapable of carrying a pregnancy to term. [6] Medically, infertility is subdivided into two broad types: secondary infertility is the inability to have a child after having conceived at least once, while primary infertility is the inability to ever conceive.[6]

The difference between infertility and sterility is that a sterile individual is unable to contribute to the conception of a child at all, whereas an infertile individual can potentially contribute toward a successful pregnancy but is prevented from doing so by one or more physical or psychological factors. For individual couples whose children are 'kidnapped, abducted, and killed',[7] their loss constitutes 'a hegemonic social and cultural construction of the late twentieth century and a dominant structure of feeling […] phenomena, also connected to the several theories that warn that childhood is disappearing or that we are witnesses to the 'end of childhood".[7] Thus, at the level of the individual couple, infertility frequently has catastrophic psychological effects on individuals involved, and may have a devastating carry-over effect on their relationship.[8]

Causation and epidemiology

Infertility may arise from a multitude of causes. Very briefly, female infertility may be caused by ovulatory problems that are often hormonal in nature, such as polycystic ovary syndrome or premature menopause; blocked Fallopian tubes (such as with sexually transmitted diseases) that prevent released ova from encountering spermatozoa or even result in a potentially fatal ectopic pregnancy that ruptures a Fallopian tube with massive internal bleeding; the inability of a fertilised ovum to implant into the uterine wall; the inability to carry a pregnancy to a viable gestation: genetic or chromosomal abnormalities in the potential mother; and a general deterioration in fertility after the age of thirty years, with a progressive decline in the ability to conceive and carry a pregnancy to term. Male infertility is usually caused by poor sperm quality, with seminal fluid that contains few or no sperm (oligospermia and azoospermia respectively); or sperm that is poorly motile and incapable of reaching the ovum (asthenospermia); or by the production of sperm with abnormal morphology (teratospermia). Rarer causes include erectile dysfunction and retrograde ejaculation. Males also experience reduced fertility with declining sperm quality with age.[9] A modern, reversible and almost science-fictional cause of contemporary male infertility is working with a laptop on one's lap, as this heat source is detrimental to sperm production. [10]

It is estimated that about 10% of couples in the developed world experience infertility, and that this number rises up to 30% in developing countries

Infertility is not an uncommon problem. It is estimated that about 10% of couples in the developed world experience infertility, and that this number rises up to 30% in developing countries where sexually transmitted diseases are more rampant due to lack of prevention (contraception and education) and treatment. In the 1960s, syphilis and gonorrhea were the only significant sexually transmitted diseases and were easily treated with penicillin. Today there are over twenty known diseases with an estimated twelve million newly infected individuals each year, and over half of these infections occur in persons under the age of twenty-five, with increasing rates of antibiotic resistance. These diseases damage the reproductive organs of both sexes, sometimes irreparably, with a resulting loss of fertility that may be permanent.[11]

Spread is facilitated by the fact that 80% of infected (and potentially infectious) individuals are asymptomatic.[12] Young women are more susceptible to these infections than older women, with higher rates of pelvic inflammatory disease that obstruct Fallopian tubes.[13] Contrary to popular belief, barrier contraceptive techniques reduce but do not eliminate the risk of acquiring sexually transmitted diseases.[14]

Moreover, both sexes in developing countries are exposed to higher levels of dietary and environmental toxins, including cigarette smoke, than populations in developed countries, and such toxins are known to depress fertility due to their deleterious effects on gametes.[15] S

to be continued

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Two Synapse Anniversaries in a row (and a birth)

MARIKA AZZOPARDI

The Synapse is this year celebrating two important anniversaries and as this interview unfolds, you will understand just why Dr Wilfred Galea's face is beaming. The Synapse - the web portal (www.thesynapse.net) - celebrated 15 years of online activity in October, whilst The Synapse magazine celebrated its decade of publications last March. Another reason for celebration is the birth of the second generation of SMS4Health services on both a local and international basis. Indeed, a lot has transpired since those initial days of experimentation, but the success story is worth remembering because of all that has been achieved since.

Dr Galea admits that one of the greatest moments of pride comes on re-evaluating the road map which had been created even before The Synapse took off. Today, looking forward, whichever the angle one takes, one finds at least two full years of activities planned in the pipeline, and this keeps all involved in the development, working very hard and motivated.

"In 1996 the concept of The Synapse was conceived before we even had any of the internet technology which we take so much for granted today. The concept of networking was so far out of reality as to be considered science fiction. Back then we had serious limitations, besides very low budgets and so we just had to get down to work with whatever tools were available."

In those early days the team behind The Synapse was also limited. It was composed of himself and Dr Gauden Galea who is today Director of Noncommunicable Diseases and Health Promotion in the WHO Regional Office for Europe. Dr Wilfred Galea refers to himself as a visionary and appreciatively admires Dr Gauden Galea who shared Wilfred's enthusiasm and coded and designed the protoype and first working versions of The Synapse, learning how to program a network application in the pre-Web era. Eventually, as things slowly took off, a programmer joined the team to help out and when Gauden had to leave for such distant lands as Nauru, Fiji or the Phillippines, Wilfred found himself running the show practically single-handedly.

"From the very beginning it was necessary to have a team to back up The Synapse. I realised that much immediately, as I juggled my growing practice and the demands of my young budding family. Today The Synapse prides itself with a very dynamic and enthusiastic team whose varied team members work in synergy backstage to ensure that the daily running of The Synapse happens hiccup-free, both online as well as in print."

At present The Synapse followers can look forward to a new version of the web portal , supported by the newest of technology which shall allow the concept and character of the whole to remain unchanged whilst allowing new developments to be reached more efficiently and at a much faster rate. Dr Galea explains how The Synapse has reached the stage where several services are being consolidated. " We are also planning to encourage more member interaction because there are so many from so many varied fields of expertise that we feel they can all contribute hugely to The Synapse community. We have also recently launched a Photography competition for members of the medical profession, including students, with the theme being 'Malta and Medicine'. For the past two years we have had images of indigenous flowers which were in some way or another linked to medicine, gracing the front cover of The Synapse magazine. The next set of six photos

which will feature on the front cover of The Synapse Magazine in 2012 will be chosen from the competition.

Dr Wilfred Galea has been involved in a number of new important initiatives during his career. He was one of the catalysts behind the formation of the Malta College of Family Doctors, being one of its three founder members. He was also one of the first founders of the core group which eventually formed the Association of Family Doctors, apart from being the founder of The Synapse suite of services which are aimed at serving the needs of medical professionals.

Another innovation has been the development of SMS4Health, an automated, web-based, SMS reminder service which has recently seen the launch of a second generation and which is aimed at both local and international markets. All this inbred urge for innovation is diametrically opposed to the traditional belief that many doctors have a natural resistance to change. "Change keeps you going, it has always been that way for me and I envisage a lot of changes which just need time to materialise".

But what about Dr Wilfred's family? "All medical professionals know that it is sometimes hard to juggle medical responsibilities with family ones. I am glad that my family carries the same enthusiasm for my endeavours and supports me as much as it can. However, being backed by a good dependable team means that I can switch off occasionally and allow my life to keep a healthy work-life balance (as much as possible). "

Dr Galea continues, "The Synapse in itself is enough to keep me thoroughly absorbed and has given its share of satisfaction. I am thrilled every time a local or foreign member sends feedback through The Synapse. One interesting anecdote is when someone contacted me asking for help as he wanted to sell his practice – he lives in New Zealand. He wanted to place an ad on the website. One Maltese doctor did pick up a lead (and eventually finished up working in New Zealand herself although she did not buy the practice), and a Canadian doctor saw the ad and responded to the advert as well. It is extremely satisfying to see all this materialising because it clinches connections the world over.

In fifteen years we made great strides and I strongly believe that you can't achieve what we achieved if we only had employees. The people working in our team are much more than employees – they are passionate people who believe in what they do, working together in harmony and total collaboration. The Synapse could never have achieved so much, had it been otherwise."

Research and Audit amongst Undergraduate Medical Students

MARK ABELA

The student's perception of their role in research and development

Medical undergraduates are often too focused on their studies and disregard the importance of Medical Research and Audit both for their own personal development and also for the benefit of the general medical community. This is probably due to the lack of exposure and understanding of what being involved in such projects truly entails. Some view it as a waste of time, others see it as beyond their expertise while others don't know where to start. This review on the topic is aimed at giving a general introduction to medical research, the pros and cons of getting involved and how any student should get started.

Introduction to Medical Research and Audit

Medical research is aimed at discovering or compiling information by applying scientific methods of collecting new data (primary research) or compiling data from already existing research (secondary research). Research can then be presented in various ways. Case-reports and literature reviews are the least demanding forms of information dissemination in the scientific community. Case reports involve briefly discussing strange or peculiar cases whereas a literature review involves compiling information from various sources about a particular topic of interest. Letters or commentary articles briefly describe important current research findings, which would be considered for fast publication. Clinical Papers constitute research studies on normal individuals or patients with the aim of obtaining new data to negate or approve a hypothesis, thereby occupying the top category in the hierarchical ladder of medical evidence. Information may also be published in the form of an audit where existing medical practice is compared with the current recommended evidenced-based management.

Importance of Research/Auditing as Doctors and Medical Students

The author considers the medical profession as a journey where skills and knowledge are acquired through practice, experience and interaction with other colleagues. Research has a very important role to play in this since it helps undergraduates, from an early stage, to think systematically and logically, along with the development of new intrapersonal skills including determination, time management and discipline. It also exposes students to important ethical principles earlier on in their career, something often lacking in practice at undergraduate level. A simple case report or literature review possibly allows a 'beginner' in the research and auditing sector to have his name published and give that extra edge to their curriculum vitae which is something employers often look out for.

The actual process of carrying out research is where students are often misled in thinking that it's impossible to accomplish, or that it's beyond the individual's abilities. On the contrary, myriad options allow any individual to delve into areas of medicine which may interest him/her, with a central focus on curiosity rather than on an exam-passing orientation. Publishing

and presenting papers in journals or conferences should be regarded as a step-wise process whereby students develop and enhance paper writing skills together with medical and statistical knowledge. Through writing up his/her own work, a student can learn to appreciate published medical evidence in terms of analysing the clinical relevance and reliability of any publication. During this process students can start to perceive articles not as a burden, but as a resource for gaining knowledge before and after graduation by contributing to life-long learning for the benefit of future patients, as stated by the General Medical Council's guidelines *Tomorrow's Doctors* where graduating medical students must be able to "*evaluate and integrate evidence critically*" [1] where they can begin to develop the roots of lifelong learning.

Practical undergraduate involvement in Research and Audit

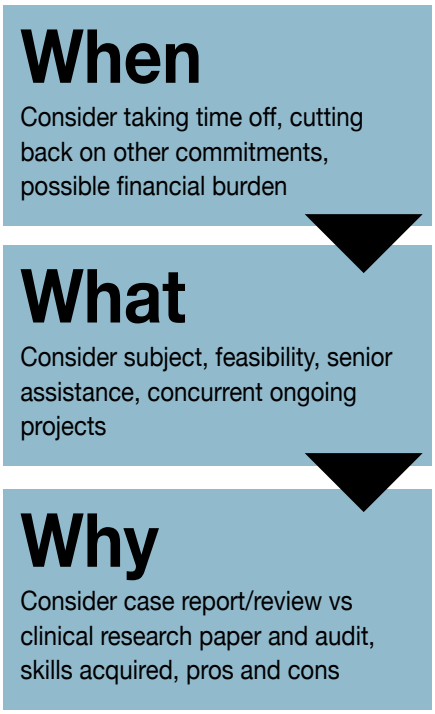
Getting involved in research should follow a number of steps so that the work is both excellent in quality and also self-fulfilling: the **3 W Scheme** should get any student started – *When, What and Why*, shown in Figure 1.

Research takes up a substantial amount of time depending on whether you are planning to do a case report or else a large scale clinical study. One might consider taking time off from studies or else cutting back on other commitments in order to achieve the objective and still perform well academically; after all, passing exams is essential to start practicing the medical profession. Therefore the '*when*' factor should be thought over carefully, considering that an element of financial burden might be present. Obviously, starting a large scale research project in your final year is not a good idea.

The '*what*' is probably the most important factor in providing the self-satisfaction that everyone wants after all the hard work. One should identify an interesting and realistic subject in order to kick off the work. At this point, one might consider seeking help from senior doctors so as to add previous knowledge and value to your work. Suggestions from more experienced individuals in the field might be beneficial both for the content of the work and also in the complexity of the study (typically with external points of contact and possibly some financial backing from sponsors). Even if you don't find a particular subject on which to focus, one can always look out for ongoing studies and enquire about the possibility of working within the research team.

The reason *'why'* you want to perform this work should deliberate whether you want to publish a case report or literature review, or else an original medical research paper. A student's role would depend on the type of research; in a case report,

Figure 1



a student would probably be in charge of writing up the preliminary case report, whilst in a literature review the main task would be a comprehensive summary of multiple papers on the particular subject. On the other hand, the tasks involved in an original clinical paper are much more variable; contacting study participants, gaining consent, lab work, logistical preparations for performing the necessary methodology, drafting up documents for financial funding and ethics committee approval, just to name a few. The involvement of senior professionals would include proposing the hypothesis and possibly the methodology along with discussion and interpretation of the results. As regards to audits, one may want to perform an internal audit on a specific aspect in primary, secondary or tertiary care, with the purpose of comparing current practice to guidelines (local or international) or evidence-based findings. As students, tasks in setting up an audit would include logistical preparations for the audit, data inputting and subsequent pooling and possibly statistical analysis.

As undergraduates possess certain limitations, the best way to start is through literature reviews, case reports or audits. Case reports are fundamental to the sharing of knowledge of one-off previously unrecognized cases amongst professionals across the world, one notable example being the enigmatic Multiple Myeloma.[2] More recently, a rare non-ischemic stress-induced Cardiomyopathy known as Takotsubo Cardiomyopathy has been recognized as a totally new disease entity, comprising specific features, all thanks to case reports from all over the world. Initially thought to just inflict Japanese citizens, multiple case reports from around the world have denied the previous suggestion.[3] Having said this, case reports are nowadays considered as appealing only to the specialised few, providing little benefit to everyday medical practice. Their scope lacks the scientific importance that is associated with the large conducted studies. However, case reports help students develop academic writing skills, learning how to submit and revise an article, all skills worth developing for future research projects.[2] Above all, a student who has not yet graduated can be happy with his/her small contribution to medical science. With time, one should aim at achieving higher targets, slowly working at climbing up the medical evidence ladder.

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Imaging Right Iliac Fossa (RIF) Pain

PIERRE VASSALLO

Abdominal pain is one of the most common causes for referral to the emergency department coming second only after chest pain. The RIF is the most common location for abdominal pain.

Clinical assessment offers little to as aid the diagnosis of RIF pain. With developements in ultrasound (US) and both spiral and multidetector computed tomography (CT), an accurate diagnosis can be made and unnecessary surgery and pontentially lethal complications may be avoided.

The most common cause of RIF pain presenting in the emergency room is acute appendicitis. This situation has been extensively studied and there is clear evidence the cross-sectional imaging with ultrasound and particularly multidetector CT has significantly reduced unnecessary surgery and shortened hospital stays of patients presenting this complaint (Figure 1). Although CT is more accurate in the diagnosis of acute appendicitis, ultrasound is preferred in children under 14 years of age and in pregnant women in order to avoid unnecessary radiation exposure (Figure 2). US findings include a fluid containing appendix with a diameter greater than 7mm. Tenderness may be noted during compression with the ultrasound probe. If the appendix is not visualised on US, it is either normal or in a retrocaecal location. CT shows again a thickened appendix that is fluid filled with linear infiltration or "stranding" of surrounding fat. An inflammed retrocaecal appendix is best diagnosed with CT. Complications such as perforation and abscess formation are detected by both modalities but are better visualised with CT (Figure 3).

Inflammatory bowel disease closely mimics appendicitis and is a common cause of RIF pain. Crohn's disease in particular has a predeliction for the terminal ilium and caecum. Ulcerative colitis (UC) is seen mainly in the distal colon, however extensive disease affecting all the colon will affect the caecum and distal ileum ("backwash iliitis"). The main features of Crohn's disease on CT are bowel wall thickening and contrast enhancement (Figure 4). Complications of Crohn's disease include instestinal stenosis, obstruction, sinus and fistula formation with other intestinal loops, the bladder and the vagina, and abscess formation (Figure 5). These are not seen in UC due to the fact that the inflammatory process is essentially mucosal in UC (Figure 6), but involves all bowel wall layers in Crohn's disease. Patchy bowel involvement will also help distinguish Crohn's disease from UC, since UC involves the bowel in a contiguous fashion.

The extent of Crohn's disease has in the past been assessed by barium sulphate X-ray studies. These studies rely on transmission of barium sulphate as a contrast agent accompanied by a bulking agent such as lactulose to obtain double contrast images of the small bowel. This technique depicts the luminal side of the bowel, but cannot assess the extent of transmural involvement, mesenteric infiltration and abscess formation. Extraluminal features of Crohn's disease are best seen with CT. Engorgement of the vasa recta as they penetrate the bowel wall (the comb sign) (Figure 7) and fat proliferation in the bowel wall at the mesenteric border (the creeping fat sign) (Figure 8) are features of active and chronic disease activity respectively. Mesenteric lymph node involvement is also seen on CT.

Infectious ilio-colitis is a common cause acute RIF pain that may be clinically indistinguishable from acute appendicitis. More common causal bacteria include *Yersinia enterocolitica*, *Campylobacter jejuni*, and *Salmonella enteritidis. Most cases are self limiting and do not require imaging, but prolonged or severe symptoms may lead to imaging to exclude alternative diagnoses. CT features are non-specific and include* circumferential wall thickening of the terminal ileum and caecum with homogeneous enhancement and adjacent mesenteric lymphadenopathy (Figure 9).

Neutropaenic colotis (or Typhlitis) presents with acute RIF pain, diarrhoea, fever and features of peritonitis. This condition is seen in neutropaenic patients undergoing chemotherapy for malignancy, such as acute leukemia, and has also been associated with other immunosuppressive conditions and post-transplantation states. The mechanism of this disease is not completely clear, but it involves intestinal mucosal damage that can rapidly progress to perforation due to a combination of infection, ischemia,

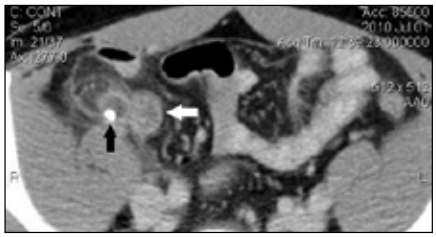


Figure 1: CT showing a thickened and distended appendix (black arrow) containing a faecolith and also showing surrounding peritoneal fat confirming acute appendicitis. Inflammation has extended to the adjacent distal ileal loop (white arrow).

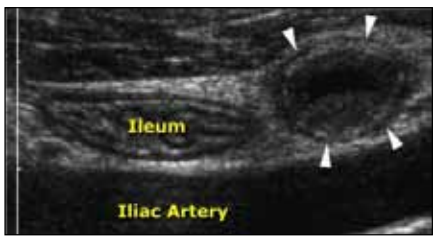


Figure 2: US shows a thickened distended appendix (arrowheads) confirming acute appendicitis as well as a normal terminal ileum both lying in front of the common iliac artery.

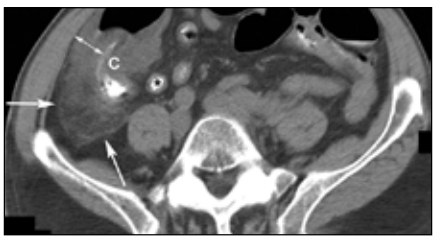


Figure 3: CT scan showing perforated appendicitis (a) thickened adjacent small bowel (SB) with abscess formation (arrows).

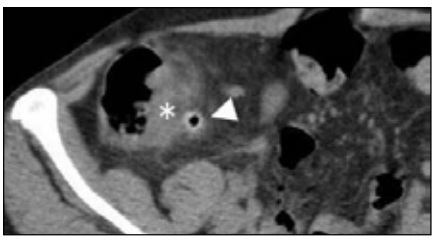


Figure 4: Wall thickening and enhacement seen in the terminal ileum (arrowheads and black arrow) and mesenteric infiltration (white arrow) in a patient with Crohn's disease.

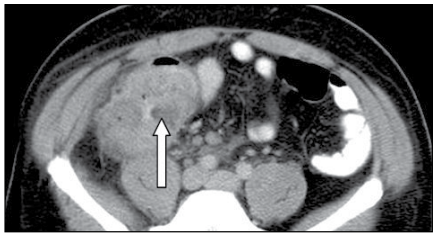


Figure 5: Complications of Crohn's disease: Y-shaped fistula (black arrow) between the distal ileum (white arrow), the caecum (arrowhead) and a psoas abscess (*).

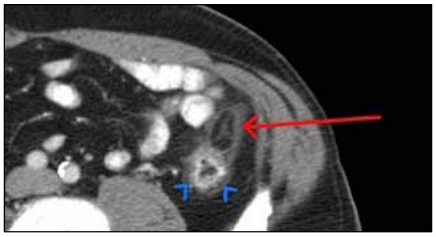


Figure 6: Ulcerative Colitis: Thickened bowel wall (arrows) and absence of extramural infiltration.

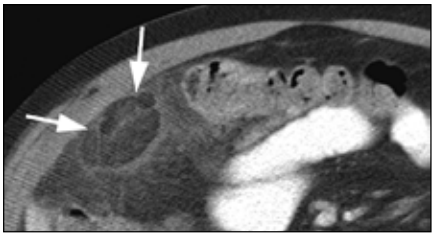


Figure 7: The comb sign in Crohn's disease.

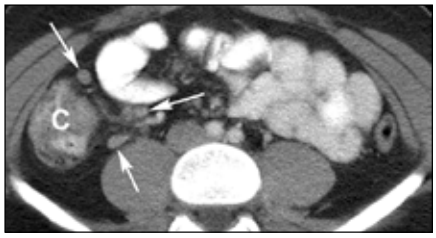


Figure 8: Crohn's disease: A thick-walled terminal ileum (black arrow) proximal to the ileocecal valve (white arrow) with adjacent fibrofatty proliferation (arrowheads).

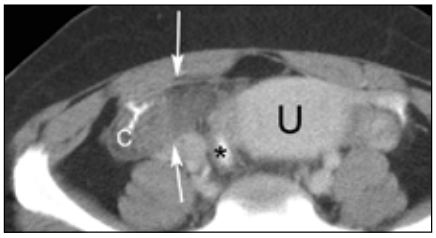


Figure 9: Infectious iliocolitis: Thickening of the colonic wall (*).

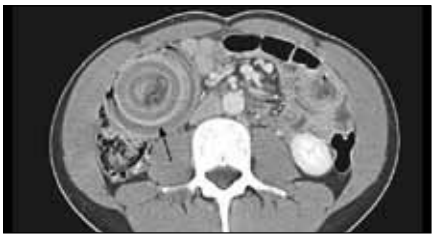


Figure 10: Typhlitis: Marked thickening of the caecal wall (arrows) and a normal termial ilieum (*).

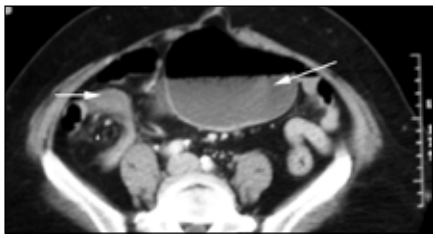


Figure 11: Diverticulitis: Enhancing caecal diverticulum (arrowhead) with marked adjacent caecal wall thickening (*).

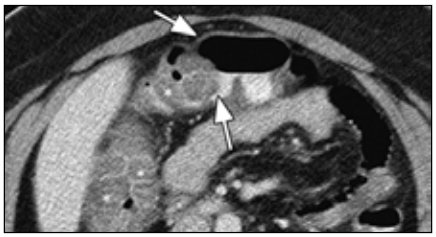


Figure 12: Caecal adenocarcinoma: Solid mass (arrow) in the RIF with normal adjacent bowel.

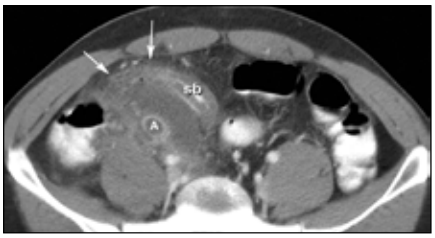


Figure 13: Epiploic appendagitis: Descending colon is normal (++) and inflammed epiploic appendage lies anteriorly (arrow).

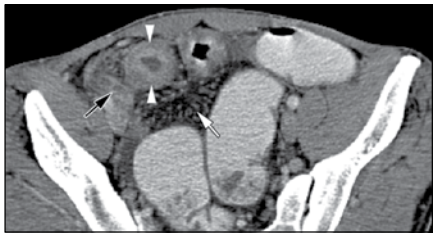


Figure 14: Omental infarction: Infarcted omentum is dark with central vessels and surrounding oedematous omentum is grey.

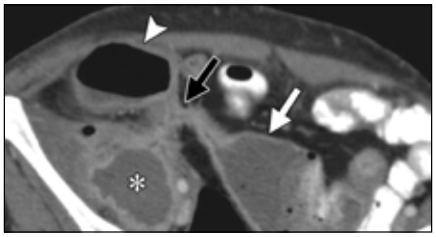


Figure 15: Mesenteric Adenitis: Multiple lymph nodes (arrows) are seen medial and posterior to the caecum (c).

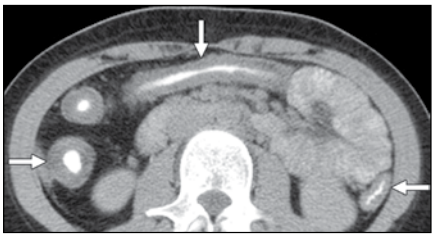


Figure 16: Endometriosis: Endometriotic deposits (arrows) around the caecum, the adjacent uterus (U) and a loop of contast containing small bowel (*).

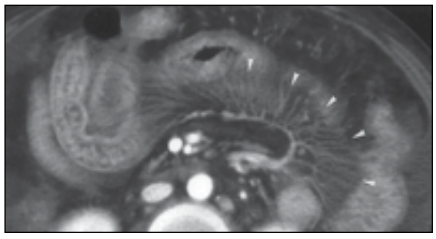


Figure 17: Intususception: CT scan shows ilio-caecal intususception (arrow) with central dark mestenteric fat and alternating rings of enhanced mucosa (light ring) and oedematous submucosa (dark ring).

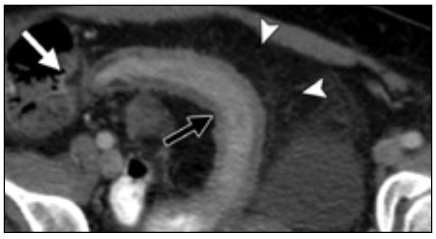


Figure 18: Caecal volvulus: CT scan shows a distended caecum (right arrow), sometimes refered to as the "coffee bean appearance and collapsed ascending colon (right arrow) with a swirl of vessels posterior to it (*).

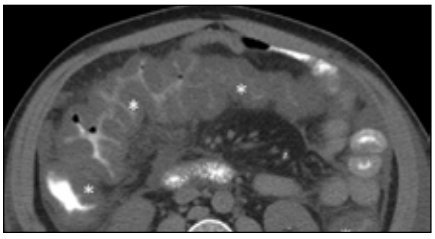


Figure 19: Ischaemic colitis: CT scan shows marked wall thickening (*) and a clear change in wall thickeness at the junction between the ischaemic and non-ischaemic bowel segments (arrows).

hemorrhage, and even neoplastic infiltration. CT is the study of choice for diagnosis of typhlitis owing to the risk of bowel perforation with colonoscopy or contrast enema examination. It typically involves the right colon, but the ileum and transverse colon may also be involved. CT features include caecal distention, circumferential wall thickening with areas of low attenuation secondary to oedema or necrosis, and inflammatory stranding of the adjacent mesenteric fat (Figure 10). RIF pain in an immune compromised individual should always prompt typhlitis as the most likely diagnosis.

Colonic diverticulitis typically affects the sigmoid colon, however involvement of the ascending colon is not uncommon and the possibility of it causing RIF pain should always be considered. CT features consist of asymmetric or circumferential colonic wall thickening associated with focal pericolic fat stranding. CT confirms the presence of diverticular disease in other portions of the colon and also complications including perforation and abscess formation (Figure 11).

Small intestinal diverticulae are uncommon, but they can be congenital or acquired. Meckel's diverticulum is a congenital type of ileal diverticulum and represent the remnant of the omphalo-enteric tract. Acquired small intestinal diverticulae are the result of herniation of intestinal mucosa through the vascular perforation at the meseteric side of the small intestine. Both types of diverticulae may be affected inflammatory disease and are uncommon causes of RIF pain. Diverticulae may also occur in the appendix; they tend to be associated with obstruction of the appendix and perforation is more common than in other diverticulae due to thin walls.

RIF malignancies such as adenocarcinoma, lymphoma, gastrointestinal stromal tumor, or metastasis, may cause pain especially in the event of a complication, such as perforation or abscess. Differentiation between an acute inflammatory condition and malignancy at CT is not always an easy task, since findings may overlap (Figure 12). A very long segment of involved bowel and extensive extramural fat infiltration especially if excessive in view of size of the bowel lesion are more suggestive of benign disease. A circumscribed mass with a "shouldered" margin bordering on normal bowel and large mesenteric lymph nodes are more indicative of malignancy.

Conditions relating to the epiploic appendages, the mesentry and the omentum may also cause acute RIF pain.

The epiploic appendages are peritoneal pouches containing fat with central vessels located at the antimesenteric border of the colon. They are more numerous in the sigmoid and descending colon. Epiploic appendagitis occurs due to torsion of the appendage or inflammation of the adjacent bowel and is the result of ischaemia or venous thrombosis. These conditions are self-limiting requiring no intervention and pose no significant threat. Normal epiploic appendages are not visible on CT, but with appendagitis there is infiltration of surrounding normal peritoneal fat and enhacement of the central vessels (Figure 13).

Omental infarction is caused by interruption of blood supply to the omentum due to torsion or venous thrombosis. Idiopathic infarction is usually precipitated by coughing, straining particularly after excessive exercise, or overeating. Secondary infarction occurs from vascular damage related to trauma, surgery, hernia, or adhesion. This presents with infiltration of the greater omentum, which is located deep to the anterior abdominal wall below the transverse colon (Figure 14).

Primary mesenteric adenitis is defined as the presence of a cluster of more than three right-sided lymph nodes in the small bowel mesentery or anterior to the psoas muscle, usually larger than 5 mm, without an identifiable acute inflammatory condition. It is thought to be related to infection of the terminal ileum (possibly viral) and is seen mostly in children (Figure 15).

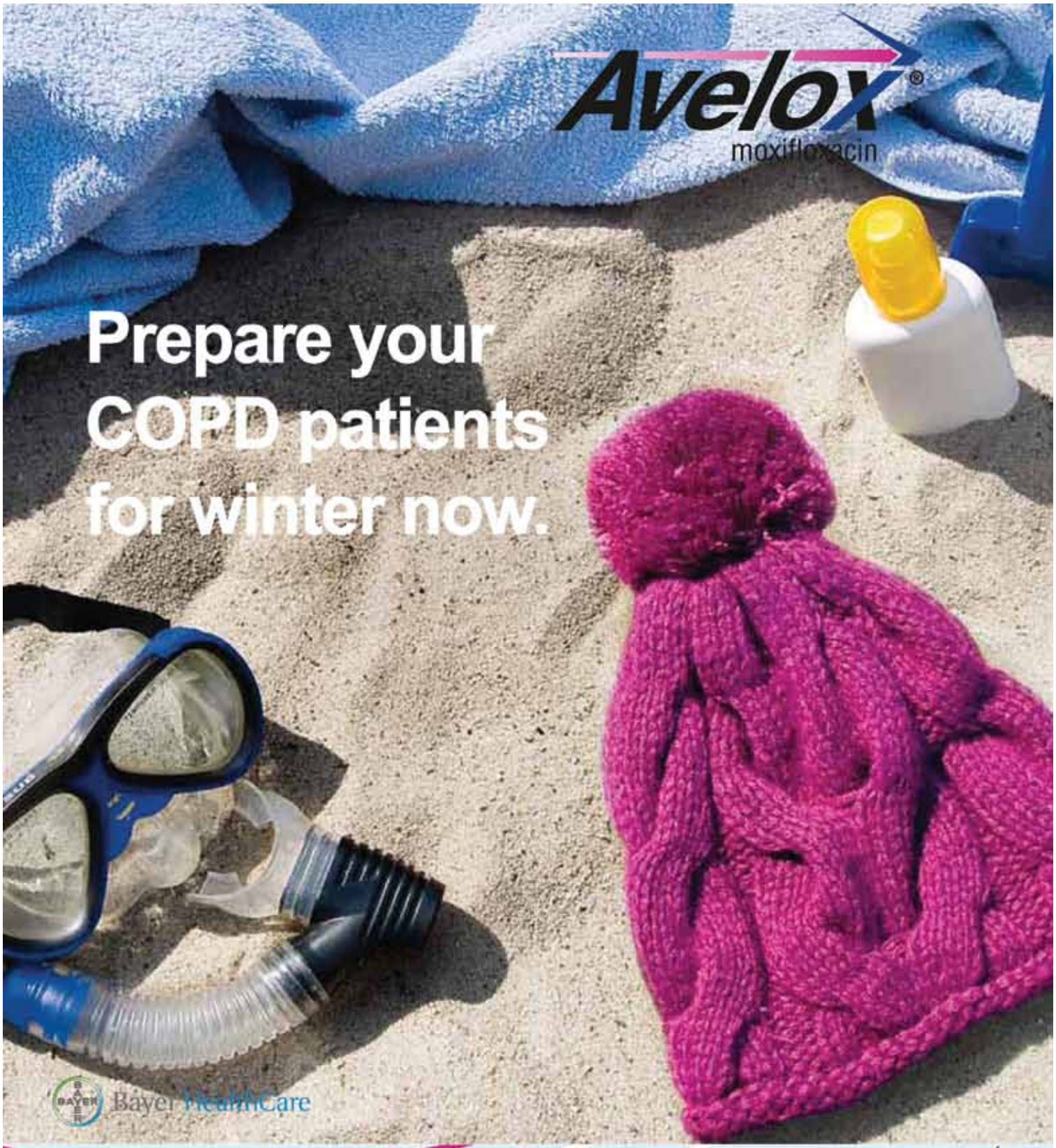
Endometriosis, defined as the presence of endometrial tissue outside the uterine cavity and myometrium, is a common disorder in women of childbearing age and is often associated with chronic pelvic pain and infertility. However acute episodes of pain are frequent particularly around mensus due to accumulation of menstrual fluid within the deposits. These deposits occur most frequently around the ovaries and uterus, but may occur anywhere within the abdomen (Figure 16).

Intussusception is rare in adults, accounting for 5% of reported cases. In children, most cases are idiopathic, while in adults many cases are secondary invagination of a benign or malignant neoplasm (eg, lipoma, leiomyoma, adenomatous polyp, lymphoma, and metastasis). Intusussception occurs most commonly at the ilio-caecal junction and ascending colon. A characteristic target shaped appearance is seen on CT, which centrally is composed of hypodense (dark) invaginated mesentry surrounded by the invaginated bowel (intusussceptum) and containing bowel wall (intususscipiens) (Figure 17). Alternating hypo and hyperdense rings seen on CT are due to layers of enhancing mucosa and oedematous submucosal tissue.

Caecal volvulus is a rare condition that occurs due to a congenital abnormally mobile caecum, which can twist along its long axis resulting in a closed-loop obstruction and bowel ischaemia. A distended caecum that may lie in the RIF or fold over into the left upper abdominal quadrant is seen on CT along with a swirl of mesenteric vessels leading to that segment of bowel (Figure 18).

Ischaemic colitis more commonly involves the left half of the colon, but it may also involve the caecum and ascending colon particularly in older patients with severe atheromatous disease and with episodes of severe hypotension. Left sided ischaemic colitis usually presents with rectal bleeding and is therefore diagnosed earlier, while right ischaemic colitis presents only with intermittent pain and possibly some constipation and hence has a higher mortality due to late diagnosis. CT features of right ischaemic colitis include a distended caecum and marked wall thickening of the ischaemic loop (Figure 19). Pneumatosis coli and pneumoperitoneum indicate mural necrosis and colonic perforation.

In summary, spiral and multidetector CT and ultrasound can provide vital information for the investigation of RIF pain. In many cases, surgery may be avoided, while in others potentially a life-saving surgical procedure may performed without delay. S



MAESTRAL

A wind of change in AECOPD

Avelox® 400mg/250ml Solution for infusion▼ and Avelox® 400mg Film-Coated Tablets▼ (moxifloxacin) Prescribing Information
(Refer to full Summary of Product Characteristics (SmPC) before prescribing) **Presentation:** *Avelox® solution for infusion* - 400mg moxifloxacin per 250ml bottle. *Avelox® tablets* - 400mg moxifloxacin per tablet. **Indications:** Solution - community acquired pneumonia (CAP) and complicated skin and skin structure infections (cSSSIs) where use of commonly recommended antibacterial agents is inappropriate. Tablets - infections caused by moxifloxacin-susceptible bacteria and when use of commonly recommended antibacterial agents is inappropriate or have failed: acute bacterial sinusitis, acute exacerbations of chronic bronchitis, CAP except severe cases, mild to moderate pelvic inflammatory disease without an associated tubo-ovarian or pelvic abscess (PID - in combination with another appropriate antibacterial agent) and to complete a course of intravenous moxifloxacin in patients showing improvement in CAP and cSSSIs. **Posology and method of administration:** *Adults: Solution* -250ml per day, constant infusion over 60 minutes. Continue treatment with Avelox® tablets when clinically indicated. *Tablets* - one 400mg tablet per day. **Special populations:** no dose adjustment required in patients with low body weight, mild to severe renal impairment, on chronic dialysis or the elderly. Contraindicated in patients < 18 years of age. Insufficient data in patients with impaired liver function. **Contra-indications:** hypersensitivity to moxifloxacin, other quinolones or excipients, pregnancy and lactation, patients < 18 years, history of tendon disease/disorder related to quinolone treatment, congenital or acquired QT prolongation, concurrent treatment with drugs that prolong QT interval, electrolyte disturbances (particularly uncorrected hypokalaemia), clinically relevant bradycardia, heart failure, a history of symptomatic arrhythmias, impaired liver function (Child Pugh C) and in patients with increased transaminases (> 5-fold ULN). **Warnings and precautions:** In cases of hypersensitivity and allergic reactions, stop Avelox® use and initiate suitable treatment. Moxifloxacin prolongs QTc interval (may increase with increasing plasma concentration), women and the elderly may be more susceptible. Plasma concentration may also increase due to rapid IV infusion. Use moxifloxacin with caution in patients with: ongoing proarrhythmic conditions, CNS disorders (or other risk factors) that may predispose to seizure or lower seizure threshold, myasthenia gravis, in patients with or a family history of G6PD deficiency, in elderly patients with renal impairment, when using concomitant potassium-lowering medications or in psychotic patients or in patients with a history of psychiatric disease. If signs of cardiac arrhythmia occur, stop treatment and perform an ECG. If liver dysfunction occurs, perform liver function tests. Cases of fulminant hepatitis potentially leading to liver failure (including fatal cases) have been reported; if signs and symptoms develop, patients should contact their doctor prior to continuing treatment. If antibiotic associated diarrhoea or colitis is suspected or confirmed, stop treatment and take adequate therapeutic measures. At the first sign of tendon pain or inflammation, discontinue treatment, rest the affected limb and consult a doctor. In cases of bullous skin reactions like Steven-Johnson syndrome or toxic epidermal necrolysis, patients should contact their doctor prior to continuing treatment if skin and/or mucosal reactions occur. Consult an eye specialist if vision becomes impaired. Advise avoidance of UV exposure during treatment. The recommended dose should not be exceeded. Not recommended for treatment of MRSA infections. Cases of sensory or sensorimotor polyneuropathy resulting in paraesthesias, hypoaesthesias, dysaesthesias, or weakness have been reported in patients receiving quinolones. May interfere with *Mycobacterium* spp. culture tests. Solution – Use with caution in patients taking medication associated with clinically significant bradycardia. Avoid intra-arterial administration. Clinical efficacy of treatment for severe burn infections, fasciitis, major abscesses and diabetic foot infections with osteomyelitis has not been established. Contains 787mg sodium per dose. *Tablets* Patients with galactose intolerance, Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine. Treatment not recommended for patients with PID requiring intravenous treatment. In PID, empirical moxifloxacin should be co-administered with another appropriate agent, unless moxifloxacin resistant *N. gonorrhoeae* can be excluded. Treatment benefit (especially in infections with a low degree of severity) should be balanced with the warnings/precautions. **Interactions:** The following are contraindicated because an additive effect on QT interval prolongation cannot be excluded: antiarrhythmics (class IA and III), neuroleptics, tricyclic antidepressive agents, certain antimicrobial agents and antihistamines, cisapride, vincamine IV, bepridil and diphemanil. Use with caution in patients taking medication that can reduce potassium levels. *Solution* – As a precaution, monitor INR more frequently in patients receiving oral anticoagulants. *Tablets* – leave about 6 hours between administration of moxifloxacin and agents containing bivalent or trivalent cations. Concomitant use with charcoal is not recommended. Pregnancy and lactation: Contraindicated. Effects on ability to drive and use machines: Advise patients to see how they react to moxifloxacin before operating machinery. **Undesirable effects:** Common – superinfections due to resistant bacteria or fungi, headache, dizziness, QT prolongation in patients with hypokalaemia, nausea, vomiting, gastrointestinal and abdominal pains, diarrhoea, increase in transaminases and injection and infusion site reactions (solution only). Serious side effects - cf. CI/Warnings and Precautions - in addition: tachycardia, atrial fibrillation, angina pectoris, ventricular tachyarrhythmias, unspecified arrhythmias, Torsade de Pointes, cardiac arrest, syncope, hypertension, hypotension, anaphylaxis (incl. very rarely life-threatening shock), allergic oedema/angiooedema (incl. laryngeal oedema, potentially life-threatening), agranulocytosis, haemolytic anaemia, seizures incl. grand mal convulsions, temporary loss of vision, visual disturbances including diplopia and blurred vision, antibiotic-associated colitis (incl. pseudomembranous colitis, in very rare cases associated with life-threatening complications), renal failure, muscle weakness, tendon rupture, rhabdomyolysis, jaundice, hepatitis (predominantly cholestatic), fulminant hepatitis potentially leading to life-threatening liver failure, psychomotor hyperactivity/agitation, psychotic reactions/depression (potentially culminating in self endangering behaviour, such as suicidal ideations/thoughts, or suicide attempts), hallucination, disturbed coordination, amnesia, bullous skin reactions like Stevens-Johnson syndrome or toxic epidermal necrolysis (potentially life-threatening) and hearing impairment incl. deafness (usually reversible). Other side effects: Prescribers should consult the SmPC in relation to other side effects. **Overdose:** No specific countermeasures for accidental overdose are recommended. ECG monitoring should be undertaken. **Incompatibilities:** *Solution* – sodium chloride 10 and 20% solutions, sodium bicarbonate 4.2 and 8.4% solutions. Do not mix with any other medicinal product except water for injection, sodium chloride 0.9%, sodium chloride 1 molar, glucose 5/10/40%, Xylitol 20%, Ringer's or Compound Sodium Lactate Solution. **Special Precautions for Storage:** *Solution* – do not store below 15°C. *Tablets* – do not store above 25°C, protect from moisture. **MA Holder: Bayer plc UK MA Number(s):** Solution –, MA 513/02702 Tablets – MA 513/02701 **Date of preparation:** August 2011. **Further information available from: Alfred Gera and Sons ltd. Telephone:**+356 21 445205 Avelox® is a registered trademark of Bayer AG. LPH.GM.AVELOX.2011.0111