NEWSPAPER POST

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MEDICAL IMAGING

Abdominal Wall Hernias: Imaging with Spiral CT

by **Pierre Vassallo**
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Abdominal wall hernias are one of the most common indications for surgery. Although hernias are often diagnosed by physical examination, equivocal cases frequently occur and are well evaluated with Spiral CT.

Abdominal wall **hernias** may be complicated by strangulation, incarceration, or trauma and are therefore surgically repaired even if asymptomatic. Post-surgical complications are also common and include hernia recurrence, infected and non-infected fluid collections, and complications related to prosthetic material. Spiral CT provides exquisite anatomic detail of the abdominal wall, thereby allowing accurate identification of clinically unconfirmed **hernias** and their contents, differentiation of **hernias** from other abdominal masses (tumors, hematomas, abscesses), and detection of pre- or postoperative complications. Spiral CT with multiplanar reconstructions is especially helpful for optimal treatment planning.

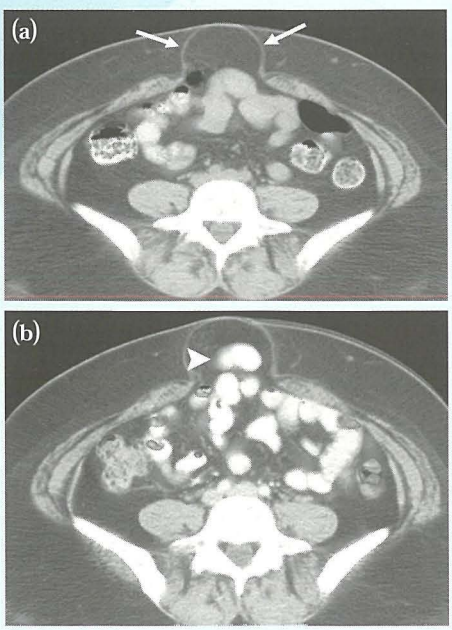

Figure 1: *Axial spiral CT images of an umbilical hernia (arrows) without (a) and with (b) Valsalva showing herniation of small bowel loops (arrow head) during Valsalva*

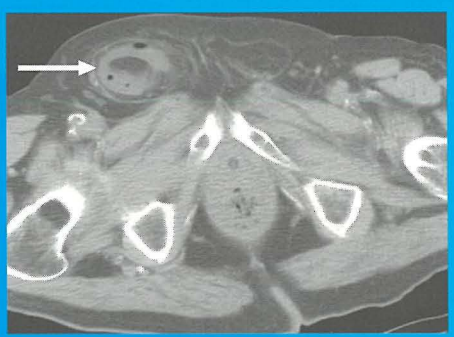

Figure 2: *Axial spiral CT image of the abdomen shows a direct inguinal hernia (arrow) in the right side of the groin containing bowel loops in the hernia sac*

IV and oral contrast material are helpful to demonstrate strangulation of the hernia.

While postural manoeuvres (eg prone or lateral decubitus patient positioning) and manoeuvres to increase intraabdominal pressure (eg, straining, Valsalva manoeuvre) can help depict subtle hernias and their true extent (Figure 1).

Groin Hernias

Inguinal **hernias** are the most common type of abdominal wall hernia. They may occur in children (most commonly indirect type **hernias**) or adults (both direct and indirect types), manifesting medial (direct type) (Figure 2) or lateral (indirect type) to the inferior epigastric vessels. Regardless of patient age, inguinal **hernias** are more common in males than in females. In boys, most inguinal **hernias** develop because the peritoneal extension accompanying the testis fails to obliterate. In adults, inguinal **hernias** are caused by acquired weakness and dilatation of the internal inguinal ring.

Femoral **hernias** are less common than inguinal **hernias**. They occur medial to the femoral vein

continues on page 2

Editor's Word

Welcome to this issue of *TheSYNAPSE*. This issue is once again fully packed with interesting and relevant articles.

Our main focus for this issue is recent advances in the fields of **Stem Cell technology** – three articles by three experts in the field give us some insight in this new and exciting field. Some of the articles will be continued in the next issue.

We also tackle very topical problems met with in practice like the ominous *pelagia noctiluca* (also known as the jellyfish that has been keeping many people from enjoying a good swim) and problems like **Chronic Venous Insufficiency**.

We also have the second and last section of the review of STI's in Malta as well as the regular articles like the current status avian influenza and moneywise.

We thank you, the readers, for your messages of encouragement. We would also like to thank the sponsors and advertisers for their trust and support. Last but not least a big thank you to the authors who have accepted our invitation to contribute to this publication.

May we invite you to benefit more from *TheSYNAPSE* services by using our state of the art services provided via the Internet through *www.thesynapse.net*

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Abdominal Wall Hernias: Imaging with Spiral CT

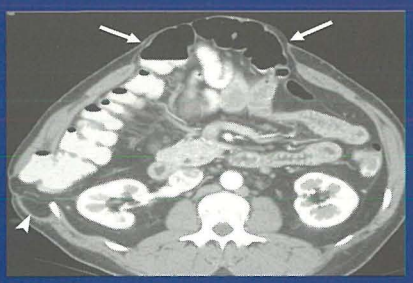

Figure 3: *Axial Spiral CT image of the abdomen shows an epigastric hernia (arrows) containing the transverse colon and small bowel loops. Note also the interparietal hernia through the right lateral aspect of the abdominal wall (arrowhead) containing the hepatic flexure of the colon*

and posterior to the inguinal ligament, usually on the right side. Unlike inguinal **hernias**, they are more common in females.

Ventral Hernias

Ventral **hernias** include all **hernias** in the anterior and lateral abdominal wall. Midline defects include umbilical, paraumbilical, epigastric, and hypogastric **hernias**. Umbilical **hernias** are by far the most common type of ventral hernia; they are usually small and are particularly common in women. Paraumbilical **hernias** are large abdominal defects through the linea alba in the region of the umbilicus and are usually related to diastasis of the rectus abdominis muscles. Epigastric **hernias** (Figure 3) and hypogastric **hernias** occur in the linea alba above and below the umbilicus, respectively.

Strangulation (ischemia caused by a compromised blood supply) and incarceration (irreducible sac) are common in all midline **hernias**. Clinical diagnosis is difficult: Physical examination is limited, especially in obese patients, and symptoms are nonspecific. Paramedian or lateral defects may also occur, although they are less common. Typically, omentum and short segments of bowel protrude through the defect. These entities have a high prevalence of incarceration.

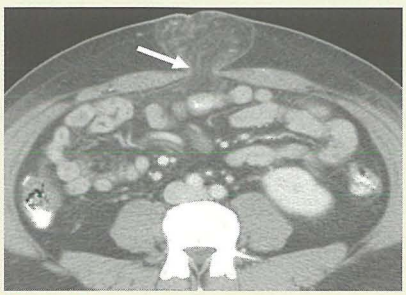

Figure 4: *Axial Spiral CT image shows herniation of omental fat through a narrow umbilical orifice (arrow) with stranding of herniated fat indicating incarceration*

Lumbar Hernias

Lumbar hernias occur through defects in the lumbar muscles or the posterior fascia, below the 12th rib and above the iliac crest. They usually occur after surgery or trauma. Herniation may occur through the superior (Grynflett-Lesshaft) (Figure 5) or, less commonly, the inferior (petit) lumbar triangle. The superior lumbar triangle is bordered by the internal oblique muscle anteriorly, the 12th rib superiorly, and the erector spinal muscle posteriorly. The inferior lumbar triangle is bordered by the external oblique muscle anteriorly, the iliac crest inferiorly, and the latissimus dorsi muscle posteriorly. Diffuse lumbar hernias may also occur, usually after flank incisions in kidney surgery, and may contain bowel loops, retroperitoneal fat, kidneys, or other viscera (Figure 6).

Incisional Hernias

Incisional hernias are delayed complications of abdominal surgery. They may manifest anywhere in the abdominal wall and are more commonly encountered in association with vertical than with transverse incisions. Incisional hernias usually manifest during the first few months after surgery. Their reported prevalence ranges from 0.5% to 13.9% for most abdominal surgeries but may be as high as 41% after aortic surgery.

Parastomal hernias are considered a subtype of incisional hernia. They occur adjacent to a stoma and are particularly difficult to detect at physical examination.

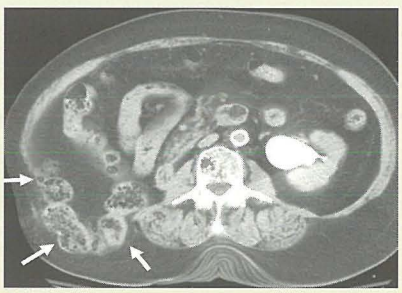

Figure 5: *Superior lumbar hernia (arrows) in a 63-year-old man following right nephrectomy for renal cell carcinoma. Note the protrusion of the ascending colon into the subcutaneous tissue*

Other Hernias

Less common hernias include *(a)* interparietal, Richter, and Littre hernias of the abdominal wall; and *(b)* sciatic, obturator, and perineal hernias in the pelvis.

Interparietal (interstitial) hernia refers to a hernia sac located in the fascial planes between the abdominal wall muscles that does not exit into the subcutaneous tissue. This type of hernia occurs most frequently in the inguinal region. Richter hernia refers to herniation of the antimesenteric wall of the bowel that does not compromise the entire wall circumference. It most frequently occurs in association with femoral hernias. Littre hernia refers to an inguinal hernia that contains a Meckel diverticulum. All of these uncommon abdominal hernias are particularly prone to incarceration and strangulation.

Pelvic hernias most frequently occur in elderly women and are secondary to acquired weakness of the pelvic floor. Sciatic and obturator hernias are rare and usually manifest as herniation of small bowel loops or a ureter through the sciatic or obturator foramen, respectively. Perineal hernias are more common than sciatic or obturator hernias and occur adjacent to the anus or labia majora or in the gluteal region.

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Stem Cells – What, Why, Wh

by **Pierre Schembri-Wismayer** *MD PhD MMCPath*
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Faculty of Medicine, University of Malta

Stem cells are a hot issue. The reason for this extreme interest is the promise of regeneration. They are presently making big waves in life sciences research conferences, in ethical discussions, and also, already, in clinical trials. Unfortunately they have also already featured in news items relating to falsification of scientific results[1]

Modern medical science has improved health in leaps and bounds when it comes to prevention of illness through sanitation and vaccination. It has also vastly improved global health with antimicrobial drugs for treating ongoing infections. It is also greatly improving obstetric care (though there is still a lot to do in developing countries).

In the parts of the world with financial resources and access to advanced hospital care, surgery and modern medicines have also achieved tremendous success in curing cancer, heart disease, obesity and other scourges of the modern world.

Such medicines have also allowed us to control to some extent the more chronic degenerative disorders of joints, kidney, lung, liver and brain to allow an acceptable quality of life to their sufferers.

However all of this is work on preventing death of cells and tissues and on controlling symptoms as one possibly can.

Regeneration, that is, re-establishing structure and function in organs which have irreversibly lost that function, is still largely a dream – a modern dream similar to the fabled elixir of everlasting life.

Medical successes in all the fields mentioned above, through increasing the longevity of patients have created a bigger market yet for regenerative medicine. This is in the population of older people who are not yet ready to die and who are keen to maintain their health and functionality for as long as they are to live.

Those of our patients, and of ourselves who have overcome heart attacks, angina and strokes all wish to continue living to the best of their ability. As do those patients continuing to struggle with diabetes or cirrhosis and coronary bypass graft patients and cancer survivors.

The present medical facilities for treating the degenerative disorders which accumulate in us as we get older are a mixed team of talented transplant surgeons, replacing joints, livers, kidneys and hearts with plastic and metal mock-ups or better still with donor organs.

Despite the great skills of these surgeons, their job is limited by the quality, durability and lack of plasticity/healing of artificial implants and also by the scarcity and immune rejection of natural organs for donation.

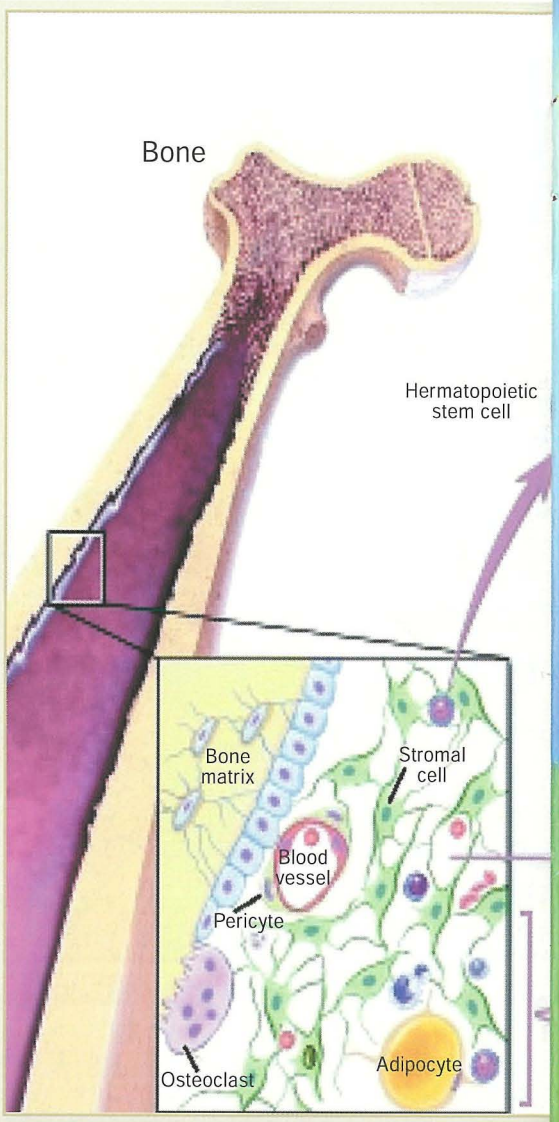
It is into this gap that the promise of stem cell therapy hopes to expand. Whilst the surgery mentioned above is a saving grace at present, I think we all hope for a day when it is largely irrelevant. As a comparison one can consider the relative obsoleteness of gastric ulcer surgery in the present milieu of endoscopy and the arsenal of anti-ulcer drugs.

Stem cells – basic definitions

So what are stem cells?

Stem cells can be broadly defined in terms of their two most salient features – the capability to self-replicate and the capability to differentiate into a wide range of derivative cell types. Both these features are necessary to make a stem cell and once a cell has these two features it shares the property of stem-ness. A cell of this nature must probably have the capability to perform a functionally polar or non-symmetric division where one daughter cell will produce another stem cell whilst the other daughter cell is programmed to differentiate into a number of more mature cell types. An easy framework in which to understand the stem cell function is in the bone marrow where a single stem cell can divide to produce a self-replica and another daughter cell which can divide to give rise to all the cell types found in blood.

Basic research on stem cells has been ongoing since the 60s when Till and McCulloch first identified colony forming units in the spleen of irradiated transplanted mice.

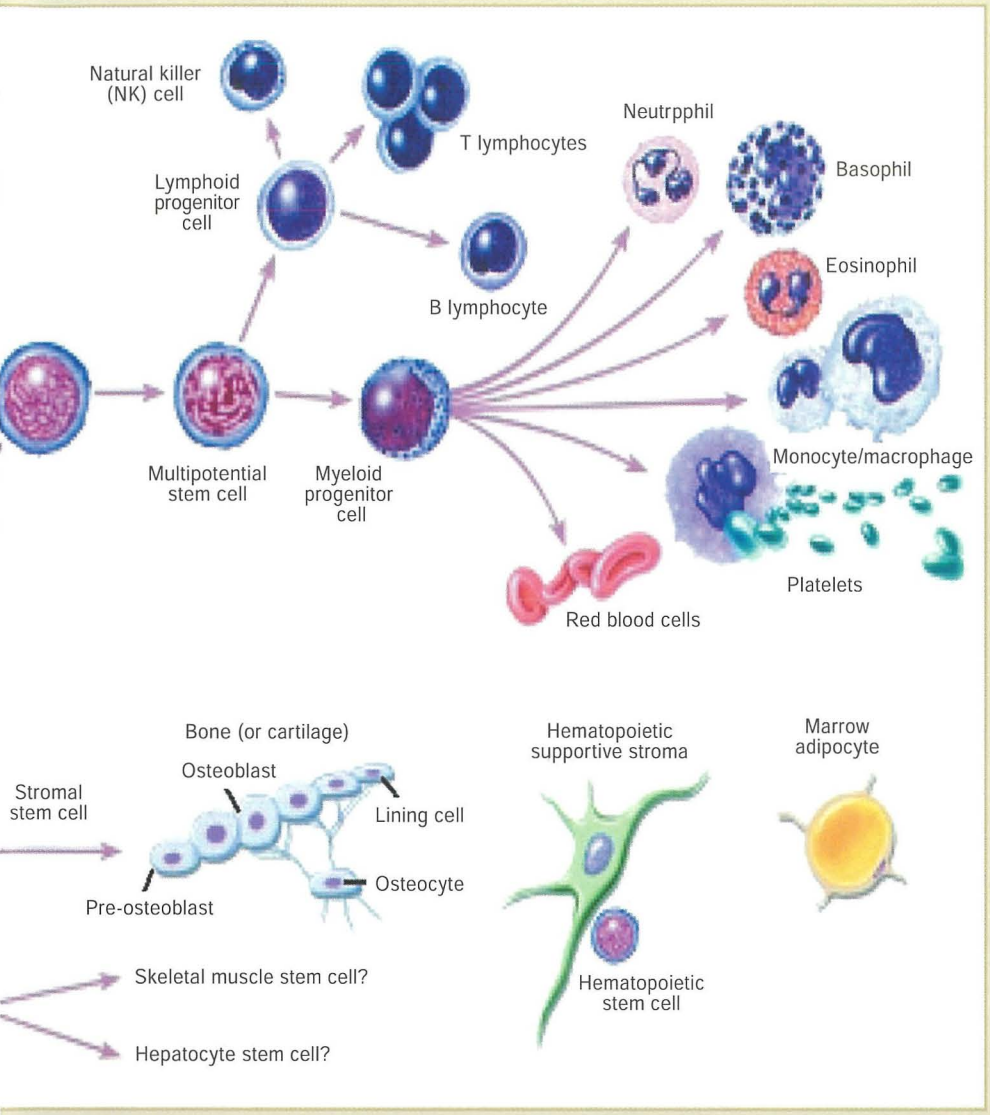


Different sources of Stem cells

Stem cells are usually defined by the range of cells they can differentiate into and/or according to their source of origin.

Thus one may talk about totipotent embryonal stem cells – these are the initial 8 cells in a morula (early embryo), each of which upon separation is theoretically capable of differentiating into a complete organism. In fact removal of one to two cells at this stage can be used to do genetic studies on an embryo pre-implantation[2] (as in certain

ereabouts and When? – Part I



recent cases of designer babies produced with the aim of providing a bone marrow donor for ill siblings). The ability to remove such cells without destroying/perturbing the remnant group of 6-7 cells contribute to the discussion about the origins of personhood and the possibility of deriving human embryonic stem cell lines from very early embryos.

Following this, further cell divisions of the early embryo lead to a certain amount of differentiation with different cells forming the embryoblast which will give rise to the embryo and the trophoblast which will give rise to much of the placental tissue.

Cells derived from the embryoblast are usually referred to as pluripotent since they can produce almost all tissues but would not be capable inherently of producing a complete conceptus and resultant human being[3]. This is the usual source of human embryonic stem cells.

The more the embryo develops, the less the range of differentiation of its cells(with the exception of those cells destined to become germ cells); at this point, these cells are called multipotent stem cells and will differentiate into tissue specific stem cells. The natural function of these stem cells throughout embryonic development and adult life is to help replace cells lost by depletion or damage.

Embryonic stem cells are thus called because they are derived from the early embryo- the embryoblast. They can be kept proliferating in tissue culture without differentiation (usually under the influence of certain cytokines, particularly Leukaemia inhibitory factor)[4]. This 'immortality' raises the possibility of small numbers of human embryonic stem cell lines being used to treat large number of patients over long periods of years.

Stem cells with a limited pluripotency can be derived from human fetuses lost at different stages of pregnancy and may have been responsible for the partial success of fetal brain transplant surgery for Parkinsons'disease[5].

All other stem cell types commonly in discussion/study are known as adult stem cells, and here are usually named according to their source of origin – umbilical cord stem cells, bone marrow stem cells, neuronal stem cells, mesenchymal stem cells etc[6].

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What works for

by **Paul Gatt** *MD FRCP (Edin)*
Consultant Dermatologist

For the second year running, and much to the dismay of locals and tourists alike, our beaches are infested by the Mediterranean Mauve Stinger, Pelagia noctiluca, so called because it is a purple coloured, open sea (pelagic) jellyfish which exhibits a weak bioluminescence and therefore shines with a faint green light in the dark. By popular account, this seems to be a particularly bad year, and jellyfish stings are increasingly being attended to by family physicians, and occasionally by dermatologists. A number of articles on the subject have appeared in the local press.[1-4]

This is by no means the first time that such infestations have occurred in recent years. Between 1980 and 1983 Axiak et al. (1991) recorded massive aggregations of this species in local waters, with densities of up to 30 individuals / m^3 in the sea and 50 individuals / m^2 on shore.[5]

Jellyfish populations bloom whenever their food (small planktonic animals in the case of the Mauve Stinger) is in good supply. Winds then generate sea currents which propel the animals to the coast, where they may remain trapped in embayments by circular currents until the wind changes and carries them away.

Photo: Stephen Mifsud
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The tentacles of jellyfish are equipped with stinging cells (cnidocytes). Each cnidocyte contains a stinging unit called a nematocyst. Upon stimulation, the nematocyst is activated, bursts open and fires a hollow barbed thread into the skin. A variety of toxins (including catecholamines, histamine, serotonin, collagenases, hyaluronidases, proteases, phospholipases, fibrinolysins, neurotoxins, nephrotoxins, myotoxins and antigenic proteins) are then injected into the skin through this hollow shaft. The effects of the sting vary according to the number of nematocysts that are activated, the species of jellyfish involved, the part of the skin that is stung, and the sensitivity of the victim to the toxins injected. They vary from a painful, red, raised cutaneous lesion which later vesiculates, to anaphylactic shock and death. Stings to the eyes are particularly severe.

Dead jellyfish stranded on the shore, unless desiccated, are capable of delivering stings for several days.

A number of remedies (Box 1) have traditionally been touted as first aid treatment for 'jellyfish stings', the purpose of each being to inactivate undischarged nematocysts and prevent further injection of toxin into the body.

Box 1: *First Aid Treatment of Jellyfish Stings*

Sea water
Sterile saline
Vinegar (5% acetic acid)
Baking soda
Isopropyl alcohol
Papain (meat tenderizer)
Urine

Do any of these remedies work?

Very few scientific studies on the effect of any of these agents have in reality been carried out, so the data is mostly anecdotal and handed down from one generation to another. Most studies originate from America and Australia, and many deal with Australian species of jellyfish. Jellyfish from other regions respond differently to different measures because they have different physiologies and elaborate different toxins. For example, vinegar effectively inactivates nematocysts from potentially deadly Cubozoan jellyfish (unlikely to be encountered in Maltese waters) but triggers them off in other species.[6] First aid measures to prevent additional nematocyst rupture appears to be species specific.[7] In this case at least, what is good for the goose is not necessarily good for the gander. The question 'what is good for a jellyfish sting' would therefore appear to be as inane as asking 'what is good for a bacterium' without specifying whether it is Gram-negative or Gram-positive, coagulase negative or positive and so forth. Isopropyl alcohol tends to make matters worse, and urine has fallen out of favour.

Do any of these remedies work for *Pelagia noctiluca* stings?

Again, no proper studies have been carried out, so the bottom line is that we do not know. In this situation, the best strategy is to employ an evidence based, minimalistic approach which at best alleviates the symptoms and does not make them worse. To my knowledge, anaphylaxis has never been reported with *Pelagia noctiluca* stings, although they may be severe, painful and complicated (Box 2).

Box 2: *Complications of Pelagia noctiluca stings*

Secondary infection
Scarring, including keloid formation
Pigmented striae
Ulceration and necrosis
Granuloma formation
Lichenification from persistent rubbing

What then, does one do - or not do?

Management of jellyfish stings is targeted towards nematocyst inactivation, pain control and local wound care.

Rubbing the skin over the affected area will cause further nematocysts to discharge and should be avoided. Similarly, fresh water (or ice) will enhance nematocyst activation and should not be used on the wound.

Any adherent tentacles should first be lifted off, ideally with a pair of forceps, and not scraped. The area should then ideally be copiously irrigated with sterile saline which will inactive any nematocysts still adherent to the skin. Since not everybody packs sterile saline into their beach bags, sea water may have to do, but this risks introducing marine pathogens into the wound.

In the event that nematocysts still adhere to the wound after

jellyfish stings?

Photo: Stephen Mifsud
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irrigation, then it probably does no harm to cover the area with an aerosol spray shaving cream and shave them off with a razor blade or credit card edge.

Ice packs, firmly applied to the wound and held there for 10 minutes are effective in relieving pain. Condensation on the surface of the pack must not be allowed to accumulate, as this effectively delivers fresh water to the wound. Ice should not be applied to the wound, as the fresh water from the melting ice will activate undischarged nematocysts. There is no evidence that topical anaesthetics, like benzocaine or lidocaine, reduce pain more then ice packs do. Heat should not be applied to the wound as this increases systemic absorption of toxin.

After care

It is reasonable to expect a combined topical steroid/antibiotic combination to reduce inflammation and prevent secondary bacterial infection. Tetanus prophylaxis should be given. Oral analgesics are effective in reducing pain, and oral antibiotics should be used if secondary bacterial infection supervenes. On no account must the wound be exposed to sunlight, as this will almost certainly result in severe, persistent post-inflammatory hyperpigmentation which is very difficult to treat.

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Safety of Labile Blood Products

by **Alex Aquilina** *MD DCP (Lond.)*
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The safety of blood depends on a number of processes, procedures, people and premises. The integration of all these factors within a total quality system is critical to ensure a safe and sustainable blood supply. Quality is defined as 'the degree to which a set of characteristics fulfills requirements'. In a blood transfusion service, the primary goal of quality is 'transfusion of a safe unit of blood'. The National Blood Transfusion service is committed to this goal. The main factors influencing infectious complications are discussed

Key words: safe and sustainable blood supply, transfusion, infectious complications.

The practice of blood transfusion is very old and transfusion of blood was considered a method of restoring a person believed to be dying by pouring blood from another person into his veins. The main problems encountered then were clotting of blood and serious adverse reactions.

Today blood transfusion therapy is scientific and successful. The practice of blood transfusion since its adventurous beginnings has improved dramatically. The decision to transfuse must be based on clinical judgement weighing the therapeutic benefits to potential risks. The possibility of transmitting one or more viruses to the recipient continues to be one of the major risks in transfusion medicine.

The prevention of infectious complications of blood transfusion involves multiple factors:

1. Reliance on voluntary non-remunerated donors, donor education and selection by medical criteria. Blood from remunerated donors poses a higher risk of infection .[1,2] The final quality of blood components starts with the selection of donors and blood collection. Donors should be carefully selected according to national regulations. In selecting individuals for blood donation the main purpose is to determine whether the person is in good health, in order to protect the donor against damage to his/her own health, and to protect the recipient against transmission of diseases or drugs which could be detrimental to the patient. To obtain relevant information about the donor's medical history and general health, it is recommended that a pre-printed questionnaire be completed. The premises for blood donation should be clean, well ventilated and with a secure water supply. Facilities should be available for a confidential interview with a donor. All the processes of blood donation such as preparation of puncture site, proper handling of containers, labelling etc. should be standardised.

2. Donation testing for infectious markers using increasingly sensitive screening and confirmation tests. Tests currently used in all countries of the Council of Europe detect HIV I/II antibodies, HCV antibodies, HBs Antigen and with few exceptions *Treponema pallidum* antibodies. In certain countries additional tests for hepatitis B Core antibodies, ALT, and HTLV I / II antibodies are also performed. Only validated tests that have been licensed or authorised by the responsible Health Authorities are applied. Some of these tests are specific to an infection, others are only indicative. With the current generation of anti HIV I / II test kits the average window period is approximately 22 days. There is evidence that HIV I Antigen screening reduces the window period by approx. six days. On these premises the FDA issued recommendations for blood and plasma donation screening with HIV I p24 antigen detection and a confirmatory p24 neutralisation assay. Nucleic Acid amplification tests are able to detect viral or other microbial nucleic acid in biological material even when this is negative by 'traditional' detection techniques. Detection of HIV RNA by PCR shortens the HIV window period by approximately five days more than the p24 Ag testing. HCV RNA could be detected in plasma on average 10-12 days after infection.[3] The HBV DNA could not be detected until 20-30 days after infection.[4]

The hepatitis A-E agents belong to five different virus families. hepatitis A and E are mainly transmitted via the faecal-oral route. The hepatitis B, C and D (delta) as well as GBV – C/V agents are predominantly transmitted parentally.[5,6]

In the early 90's, clusters of HAV infection were seen in Haemophiliacs in four European countries. So far there is no conclusive evidence that HGV causes hepatitis or any other disease. Possibly it is an innocent bystander in diseases caused by other agents. Detection of HGV relies on the demonstration of HGV specific RNA.

Iatrogenic transmission of CJD has been documented for recipients of Human Pituitary derived hormones and dura mater transplants. Furthermore it was also reported in corneal transplants. All lookbacks in recipients of blood from donors who developed CJD were negative.

Surrogate tests: ALT elevation precedes anti HCV seroconversion by about 4 weeks. In a small minority, hepatitis B and C patients may remain seronegative. An acute hepatitis A may be identified. Anti HBc may also pick up seronegative hepatitis B donors. Several reports have shown that hepatitis B Virus infection may be transmitted to recipients from donors with Anti HBc as the only serological marker of hepatitis B infection.[7-9]

Other viruses of potential significance include Parvovirus B19, HTLV I / II and CMV.

In screening for infectious markers there must be special emphasis on training of staff, maintenance and calibration of equipment, and good documentation of all the steps involved. Where the donor is found to have a repeat reactive result on a first sample, a further sample should be tested to confirm these results and to confirm the identity of the donor.

The specific approach to quality of screening must rely on:

a. Internal day-to-day quality control;
b. External Quality checks;
c. Occasional internal exercises;
d. External proficiency exercises.

3. Removal of cell associated micro organisms by leucocyte filtration. Leucocytes are vectors and reservoirs for many infectious agents including CMV and HIV. They may also harbour bacteria such as *Yersinia enterocolitica*. Leucocyte depleted blood is an acceptable alternative to CMV negative blood for the prevention of CMV transmission. Differentiated B-lymphocytes appear to be responsible for transferring Transmissible Spongiform Encephalopathies to the brain, and these cells may be a vector of infection. Universal leucodepletion is today practiced in an increasing number of countries.

4. All aspects of blood safety depend on strict adherence to good manufacturing procedures. All procedures must be well documented. The final point should be a comprehensive audit of all the procedures involved including a 'Haemovigilance' system. Haemovigilance is defined as a system of surveillance, ranging from the collection of blood products to the follow up of recipients, to gather and assess incidents resulting from the transfusion of labile blood products. The aim of such a system is to prevent the recurrence of incidents by identifying their cause.[10,11]

continues on page 20

I'M DIGGER
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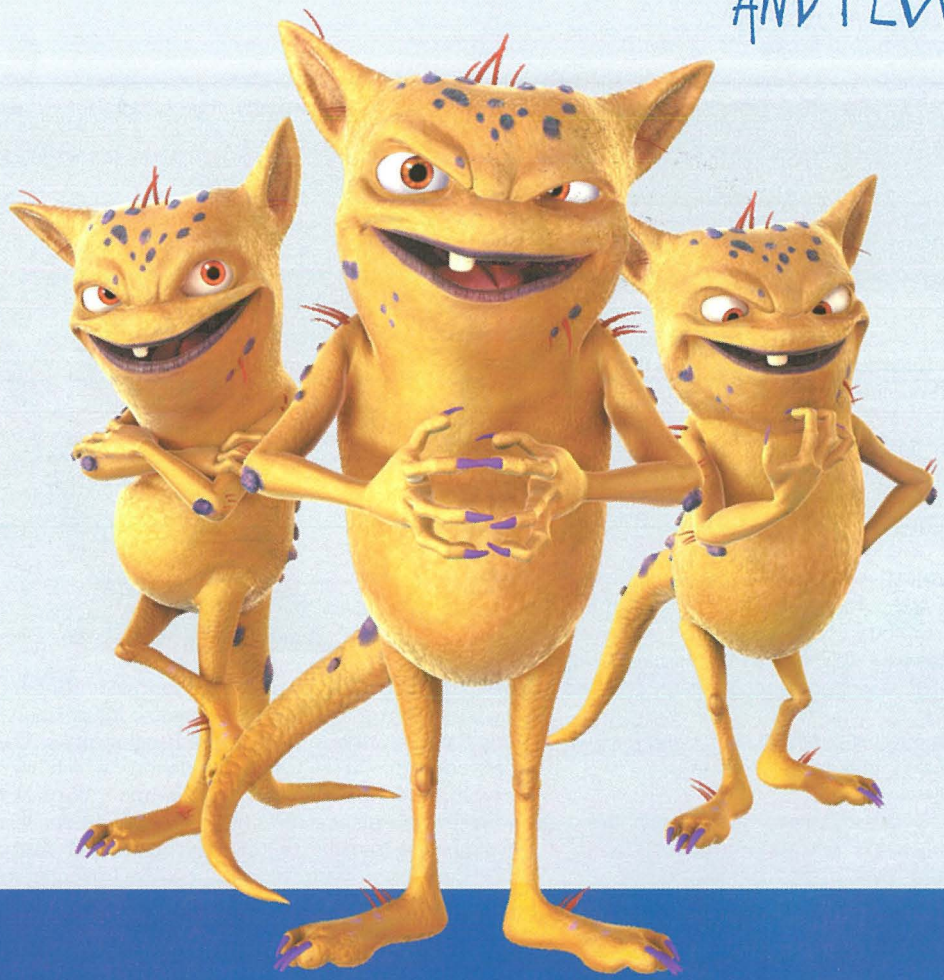

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References: 1. ROBERTS DT et al. 2003 Guidelines for treatment of anychomycosis. BR J Dermatol 148:402-10. 2. RYDER NS., FAVRE B. 1997 Antifungal activity and mechanism of action of terbinafine, Rev. Contemp. Pharmachother 8:275-87. 3. EVANS EGV, SIGURGEIRSSON B. for the LION study group. 1999 Double-blind, randomized study of continuous terbinafine compared with intermittent itraconazole in treatment of toenail onychomycosis. BR Med J 318:1031-5. 4. HAVU V et al 2000 A double-blind, randomized study to compare the efficacy and safety of terbinafine (Lamisil®) with fluconazole (Diflucan ®) in the treatment of onychomycosis. Br J Dermatol 142:97-102. 5. KATZHI. 1999 Drug interactions of newer oral anti-fungal agents, BR J Dermatol 141(suppl 56):26-32. 6. CRIBIER BJ., BAKSHIR. 2004 Terbinafine in the treatment of onychomycosis: a review of its efficacy in high-risk populations and in patients with nondermatophyte infections Br J Dermatol 150:414-20. 7. GUPTA AK. Et al 2004 Cumulative meta-analysis of systematic anti-fungal agents for the treatment of onychomycosis Br J Dermatol 150:537-44. 8. IMS PADDS March 2005, US Dollar, Market defined as J2A+D1A1.

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Presentation: Terbinafine as the hydrochloride. Tablets (scored) 250 mg. **Indications:** Fungal infections of the nails, hair, scalp, and skin, including dermatophytoses and yeast infections caused by the genus Candida. **Dosage:** The duration of treatment varies according to indication and severity of infection. **Children** (2 years and older): < 20 kg body weight: 62.5 mg once a day. 20 to 40 kg body weight: 125 mg once a day. > 40 kg body weight: 250 mg once a day. Adults: 250 mg once a day. **Contraindications:** Hypersensitivity to terbinafine and any of the excipients. **Precautions/Warnings:** Not recommended for patients with pre-existing, chronic or active liver disease. Pre-existing liver disease should be assessed before prescribing Lamisil tablets. Hepatotoxicity may occur in patients with and without pre-existing liver disease. In case of signs or symptoms suggestive of liver dysfunction hepatic origin should be verified and Lamisil therapy should be discontinued. Caution with impaired renal function. Use in pregnancy not recommended, unless clearly necessary. Avoid breast-feeding. **Interactions:** Rifampicin increases the clearance of terbinafine by 100%, and cimetidine decreases the clearance of terbinafine by 33%. Terbinafine decreases the clearance of desipramine by 82%. Caution with concomitant use of CYP 2D6 substrates with a narrow therapeutic window (e.g. certain members of the drug classes such as tricyclic antidepressants (TCAs), β-blockers, selective serotonine reuptake inhibitors (SSRIs), antiarrhythmics class 1C and monoamine oxidase inhibitors (MAO-Is) Type B). **Adverse reactions:** Very common: felling of fullness, loss of appetite, dyspepsia, nausea, mild abdominal pain, diarrhoea, rash, urticaria, arthralgia, myalgia. Common: headache. Uncommon: taste disturbance resulting in a decrease of food intake leading to significant weight loss in very few cases, isolated cases of prolonged taste disturbances. Rare: hepatobiliary dysfunction (including very rare cases of serious liver failure). Very rare: neutropenia, agranulocytosis, thrombocytopenia, anaphylactoid reactions (including angioedema), lupus erythematosus, serious skin reactions (e.g. Stevens-Johnson syndrome, toxic epidermal necrolysis, acute generalized exanthematous pustulosis), psoriasiform eruptions or exacerbation of psoriasis, hair loss, fatigue. **Packs and price:** Country specific. **Note:** This product is a POM, before prescribing please read full prescribing information.

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Ethical aspects of umbilical

by **Pierre Mallia** *MD MPhil PhD FRCGP*
Lecturer in Biomedical and Clinical Ethics

Success in using cord blood stem cells to treat haematopoietic blood disorders has led to the exciting field of creating banks for cord blood in order to donate stem cells to potential patients to treat specific disorders.

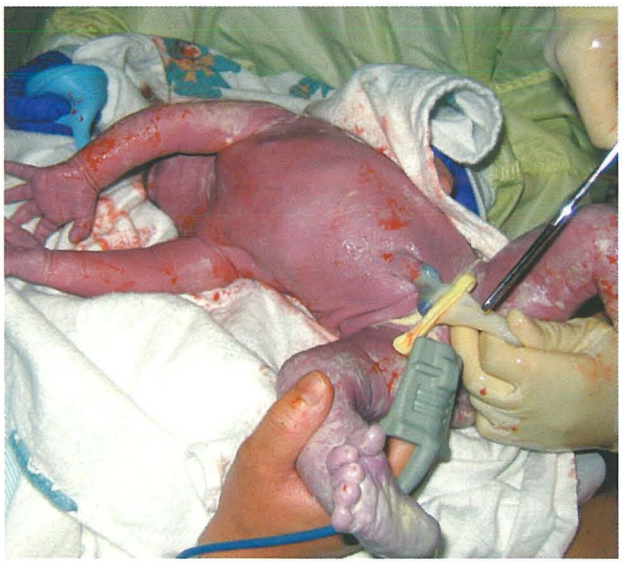
This has led to private companies seeking to address the issue of giving potential parents the option, against a cost, of storing their children's cord blood, for their personal use in the case the child had to develop a blood disorder in the future. Storage also has the benefit that ongoing research in the area continues, and if new uses for these cells are found, then their storage would have been worthwhile in the long run. Different types of cord blood banks are now therefore distinguished: private and public, and, for-profit and not-for-profit ones.

In 2001, EU President Romano Prodi, requested the European Group on Ethics in Science and Technology to study the ethical aspects of these ventures. In 2004, chairman Goran Hermeren, with whom we are well acquainted in Malta in the ethical field, and his team issued an interesting report in this regard. The first of these articles summarizes this report; Part II will deal with what we actually mean by offering parents a choice and how we should view informed consent in vulnerable groups.

Cord blood can be an alternative to bone marrow transplantation in the treatment of patients with blood and immune disorders. It is currently being used for the treatment of leukaemia, lymphomas, aplastic anaemia and blood hereditary disorders.[1] It is also a source for stem cell research. It is useful to point out that the current use of cord blood stem cells has thus far been of an allogenic type – that is, the cells are obtained from donation. There is less likelihood of rejection of stem cells than there is in bone marrow transplant. In order to be useful the sample to be transplanted must contain sufficient quantities of cells which vary according to the patient's weight. Therefore this type of transplantation, for now, is only possible in people below 50kg, and therefore who are mainly children. Nevertheless, recent experience of combining samples have also shown success in adults. Until 2004 over 3000 transplantation from cord blood have occurred world wide. Therefore '*indications to store blood at birth in view of a future autologous graft are for the present time almost non-existent*'.[2] An exception would be those who have rare leukaemias.

The possibility of using one's own cord blood for autologous transplantation should the need arise is therefore purely hypothetical, and convincing parents to invest (about Lm900, locally) their future child's cord blood carries great ethical implications which, as we shall see, go beyond simply giving people a choice. The European group expressed concern that having people collect cord blood during the immediate post-partum can affect the team working during the delivery, and although the collection is technically simple, it needs to be done by experts and also on a regular basis so that these interventions become a natural procedure in hospital settings. This is why we should concentrate more on public banks.

There is indeed a need for a great diversity of cord blood in order to have as much HLA types as possible. Networks of banks and registries around the world have been created, the biggest



being the Bone Marrow Donors Worldwide (BMWD), which is a bone marrow and cord blood registry. Information technology help these networks to share and exchange samples. The European network is the NETCORD foundation[3], which has even established an on-line search programme – Virtual Office – whereby transplant centres need only submit one search and avoid having to make multiple searches through many networks. The European Commission (EC) is also financing research projects through its Research and Development Framework Programmes (FP6 and FP7 frameworks). One such project has been EUROCORD, established in 1996, whose objectives include establishing a registry by working in close collaboration with NETCORD.

Legal Background

Article 21 of the Oviedo Convention of the Council of Europe provide that *'the human body and its parts shall not, as such, give rise to financial gain'*. An Additional Protocol to this convention, opened for signature in 2002, provides that what is applicable to tissues, is applicable also to cells, including haematopoietic stem cells. The European Health Committee of the Council of Europe adopted a recommendation on autologous banking stating that 'if cord blood banks are established, they shall be from altruistic and voluntary cord blood donation and used for allogeneic transplantation and related research', and that, 'the promotion of donation for autologous use and the establishment of cord blood banks for autologous use should not be supported by member states or their health services'. It continues to proscribe accurate information to the population about the disadvantages and advantages of cord blood banking and where autologous banking is to be considered, proper informed consent procedures are to be adopted. This will be dealt with in part II of this article, but suffice it to say that in vulnerable people, such as expectant parents, it is not merely about providing a choice; information and understanding can easily be thwarted because of unnecessary fears or a sense of lack of duty towards their offspring being subtly instilled.

It is worth noting what some other European states have said on the issue of private banking. The French Bioethics Consultative

cord blood banking – Part I

Committee said that these banks contradict the principle of solidarity; raise hopes of utopia whilst covering a mercantile project using assistance to children as a screen; at the moment of birth, attention from the mother and child could be diverted, and even that the high cost for a currently useless technique would render even the management of an autologous bank by the state as unethical.[4]

The situation in Belgium is not so different and a draft Royal decree has been prepared which unequivocally states that the use of umbilical cord blood cells for preventive measures which aim at giving advantage to those who only can afford it should be condemned and prohibited. Any approval has to be given directly by the minister and can only be considered for non-profit-making organisations.

In Italy, private banking has been forbidden and any banking must be approved by the regional government and allowed only because therapies from umbilical cord blood are still under study. Cord blood banking is thus only authorized as a public conservation structure.

Ethically therefore there are three main areas of concern. The first is that the principle of solidarity is jeopardized if cord blood banking is done only for autologous use and not for altruistic reasons and donation; the principle of proportionality is breached when one balances the objectives against the means; finally, the principle of doing no harm to vulnerable groups. The latter is most concerning. When one considers the value laden conflict between free enterprise against the principles of justice and solidarity, one must be careful not to allow the symbiotic relationship between industry and medicine, become a parasitic one. It is tempting for entrepreneurs to venture into health care, dragging with them professionals who risk damaging not only the reputation of their own profession but the very people they entered the profession to help. It goes without saying that being paid for such services ventures on the abuse of the patients to whom they were entrusted with.

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Acknowledgement

I am grateful to Smart Cells International Ltd., a local private, for-profit, bank, for their enthusiasm and courage to invite me to give a talk on this subject, which was delivered earlier this year.

Chronic Venous

by Mr Anthony Zammit MD FA für Chirg
Consultant Surgeon, Senior Lecturer in Surgery

Chronic Venous insufficiency (CVI) is a common disease with significant morbidity that results from venous hypertension of the extremities. Increased perfusion pressure probably traps excessive numbers of white blood cells in the capillaries.

Activated leukocytes subsequently damage capillary endothelium, increase capillary permeability, and cause ischemia of overlying skin as a result of leakage of fibrinogen and formation of a fibrin cuff. Diagnosis of CVI is not difficult because its clinical manifestations are usually evident.

In addition to poor cosmetic appearance, CVI can lead to chronic life-threatening infections of the lower extremities. Pain, especially after ambulating, is a hallmark of the disease. CVI causes characteristic changes, called Lipodermatosclerosis, to the skin of the lower extremities, which lead to eventual ulceration.

Epidemiology

Peak incidence occurs in women aged 40-49 years and in men aged 79-79 years.[1] A high percentage of Maltese population has symptoms due to CVI, which can lead to skin changes and venous stasis ulcers.

Clinical manifestations include the following:

- Varicose veins: In addition to poor cosmetic appearance, varicose veins serve as indicators of venous hypertension. Most women with superficial varicose veins complain of their unsightly appearance;
- Leg discomfort: Venous hypertension in muscles of the lower leg from exercise and prolonged standing is the characteristic ache of CVI. The discomfort is described as pain, pressure, burning, itching, dull ache, or heaviness in affected calves or legs;
- Ulcers: Typically, these lesions occur around the *medial malleolus*, where venous pressure is maximal due to the presence of large perforating veins;
- Edema of the lower extremities caused by venous insufficiency is one of the most frequent symptoms of this pathology;
- Lipodermatosclerosis: These characteristic skin changes in the lower extremities include capillary proliferation, fat necrosis, and fibrosis of skin subcutaneous tissues. Skin becomes reddish or brown because of the deposition of hemosiderin from red blood cells.

Risk factors associated with chronic venous insufficiency

- Age: Incidence of CVI rises substantially with age;
- Family history: History of deep vein thrombosis (DVT), which renders venous valves incompetent, causing backflow and increased venous pressure, is a risk factor;
- Pregnancy: 8-40% of the pregnant women encounter it for the first time during pregnancy;[2]
- Lifestyle: A sedentary lifestyle minimizes the pump action of calf muscles on venous return, causing higher venous pressure. CVI occurs more frequently in women who are obese. Vocations that involve standing for long periods predispose individuals to increased venous pressure in dependant lower extremities. A higher incidence of CVI is observed in men who smoke.

Medical Approach

Surgery – Surgical treatment consists of removing the varicosities and the incompetent perforating veins, but is limited to persons with patent deep veins. Before 1985, surgery on incompetent perforator veins in patients with severe, chronic, venous insufficiency and venous ulcerations was generally performed utilizing long skin incisions through diseased skin and subcutaneous tissues. Known as "the Linton operation", wound infections and poor healing complicated this procedure. Today a new surgical technique for identifying and ligating incompetent perforator veins is being utilized using an endoscopic approach in the limbs' subfascial space.[3]

Injection Sclerotherapy – Although the main treatment for varicose veins with proximal venous reflux is surgery, it is not possible to do the same for the small veins that run into the skin. The aim of treatment is to obliterate them by not letting blood run through them. Sclerosant agents such as sodium tetradecyl sulphate (FibroVein®) is injected into the collapsed superficial vein where the chemical exerts its effect on the endothelium, causing swelling of its lining cells, with formation of red thrombus inside the lumen. The thrombus is gradually absorbed, but scar tissue forms, which occludes the lumen and the vein segment becomes obliterated (usually in 3-4 weeks).[4,5]

Lasers – Laser and Pulsed Light treatments are being used as an alternative to or to complement sclerotherapy for small veins. They all work on the same basic principle: a light beam is pulsed onto the veins in order to seal them off. Successful light-based treatment requires adequate heating of the veins. Several treatments are usually needed for optimal results.

Other approaches

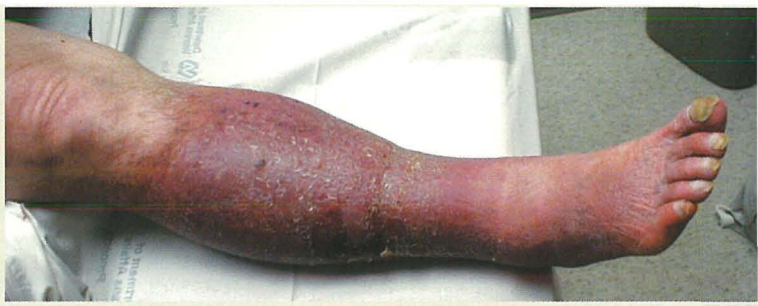
Pharmaceuticals – Phlebotropic agents like diosmin act by reducing the recapture of noradrenalin by the nerve muscles cells. There is therefore more of the mediator, Noradrenalin, which can act on the receptors. The concentration of myocytes is therefore extended.

Insufficiency

Diosmin's mechanisms of action include improvement of venous tone, increased lymphatic drainage, protection of capillary bed microcirculation, inhibition of inflammatory reactions and reduced capillary permeability.[6,7]

Compression stocking – When correctly fitted, elastic support stockings compress the superficial veins and prevent distention. The most precise control is afforded by prescription stockings, measured to fit properly.[8] These stockings should be worn before one gets into a standing position at a time when the leg veins are empty.

Leg Elevation – By keeping the legs elevated, venous flow is augmented by gravity, lowering venous pressures and ameliorating edema.



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Maltese Medical Professionals go "e"

More than 130 participants to date

The Association of Surgeons has introduced electronic learning modules which are designed for practitioners to brush up their knowledge and keep up to date.

These interactive modules are available online at http://cme.thesynapse.net

The first module is entitled Vertigo, the second, The Acute Abdomen and the third centres around pre-operative preparation of patients with chest problems.

During the first two months since launch, more than 130 members have participated in the modules. The modules are free of charge and may be completed at one's leisure.

Members who complete the modules will receive a certificate of participation.

The modules are endorsed by the Malta College of Family Doctors, the Departments of Surgery and Medicine at the University of Malta, and the Malta College of Pharmacy Practice. Three CME points are awarded per completed module.

For any information regarding eCME please contact Mr Adrian Agius, eCME Coordinator on 79786046 or send an email to aagius@synapse.net.mt.

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6th Malta Medical School Conference

Dr Simon Attard Montalto
Chairman, Organising Committee

Preparations for the 6th Malta Medical School Conference (MMSC) are well under way: the conference 'infrastructure' is complete and, this time around, the conference will be hosted at the Radisson SAS Hotel, St Julian's, with the plenary and major 'breakout' sessions to be held in the grandiose ballroom.

The conference will span two and a half days, from Thursday 30th November to Saturday 2nd December, three years to the day following the 5th MMSC! Professor Sir Alfred Cuschieri described the 5th MMSC as the "best Malta Medical Conference to-date", so we have a challenge to go one better with the 6th! Indeed, the scientific programme is now being drawn up and will cover a multitude of topics, in both oral and poster presentations.

We are conscious of colleagues' work and time constraints and have, for example, planned focused GP-orientated sessions as well as the 'dental session' for the Saturday morning. Eminent speakers for the plenary sessions have been confirmed and we now welcome abstract submissions from all medical and paramedical disciplines. Please visit the conference website on for details relating to registration, abstract submission, etc. We are very grateful for the commitment shown by the organizing committee to-date, as well as our multitude of sponsors.

Ultimately, however, it is the presenters and participants that 'make' a conference and we would urge prospective participants not to leave things to the last minute and look forward to seeing you in December.

The conference is approved by the European Union of Medical Specialists (UEMS) for accreditation points.

University of Malta Medical School, St Luke's Hospital, G'Mangia, Malta
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Sixth Malta Medical School Conference

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Deadline for abstract submission: 30 July 2006

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Winning with TheSYNAPSE

Join the Winners... take the eQUIZ

The winner for the **Diosper® eQUIZ** held in May 2006 is Dr Mary Rose Cassar.

At the end of last year, Actavis has launched Diosper® on the local market. Diosper® contains 450mg Diosmin and 50mg Hesperidin.

Diosper® is an oral *phlebotropic* drug indicated in the treatment of Chronic Venous Insufficiency (CVI). Diosper® is a venotonic and vascular protecting drug. It acts on the venous system by reducing the venous dilatation and venous stasis and also it increases the venous tone.

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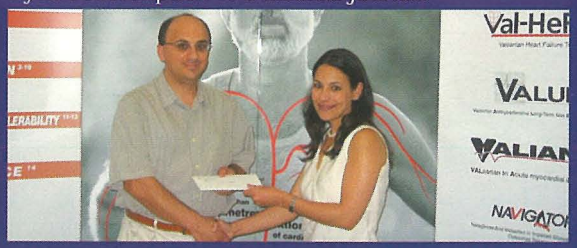
Diovan® (valsartan) by Novartis Pharma, is the only Angiotensin II Receptor Blocker (ARB) to be approved by both the US Food and Drug Administration as well as the European Health Authorities for use in all the three indications of hypertension, heart failure as well as following a myocardial infarction. Diovan® is available in an 80mg and 160mg dosage form, whilst for those patients who require combination therapy to get them to goal, Co-Diovan® which is the fixed dose combination of valsartan + hydrochlorothiazide is available in three different strengths : 80/12.5mg, 160/12.5mg and 160/25mg.The winners of the Diovan® eQuiz were Dr. Joseph Brincat and Dr. Antoine Chircop. Dr Joe Brincat opted for a 1 year's subscription to The Lancet, whilst Dr Antoine Chircop opted for a 1 year's suscription to the Journal of the American Medical Association (JAMA).

The winners of the Diovan® eQuiz where Dr Joseph Brincat and Dr Antoine Chircop. They each won a 1 year's subscription to a medical journal.



The winner for the **Aspirin Induced Asthma (AIA) eQUIZ** is Dr. Nadia Cilia.

AIA is a specific form of asthma where taking aspirin and/or some other pain relievers can trigger an asthma attack.[1] Non-steroidal anti-inflammatory drugs (NSAIDs) have a similar mechanism of action to aspirin and can trigger asthma in almost all people whose asthma is sensitive to aspirin.[1] However, less than 2% of asthmatic patients are sensitive to both aspirin and paracetamol.[1] Fortunately if paracetamol does trigger an asthma attack it is usually milder and more easily reversed than an attack triggered by aspirin.[2]

Paracetamol, the active ingredient found in **Panadol®**, is the pain reliever recommended as a first line by health care professionals.

References: (1)Jenkins C, et al. BMJ 2004; 328(7437):434, (2)Settipane RA, et al. J Allergy *Clin Immunal.* 1995;96(4):480-485.

The 36th Annual WMTS Congress and Championship

The Medical Tennis Association (Malta) (founded 1984) is very pleased to organise the 36th Annual Congress and Championship of the World Medical Tennis Society in Malta.

The professional organisers of the 36th Annual WMTS Congress are Mondial Holidays, Valletta. You can contact them any time either by fax: +356 21223857 or e-mail: mabele@mondial.com.mt with any queries or special requests. Updated information can be obtained from the following web-site: www.wmtsmalta.com. Regular updates will also be available through TheSYNAPSE Medical Portal on www.thesynapse.net.

Errata Corrige:

With respect to article by Dr Stephen Abela regarding assessment of people with memory problems the last paragraph should read as follows:

"Although there is no definite cure for dementia, the availability of anti-dementia drugs such as the cholinesterase inhibitors (donepezil, rivastigmine and galantamine) and NMDA antagonists (memantine) can lead to improvement in cognitive function"

We apologise for the error.

Doing to and being with

MALTA DEMENTIA SOCIETY

Malta Dementia Society
c/o Room 135,
Department of Pharmacy
University of Malta
Msida, MSD 06

www.maltadementiasociety.org.mt

The Malta Dementia Society is a non-governmental and a non-profit organisation for persons with dementia, their carers, families and friends. The society also brings together healthcare professionals and interested persons to increase the knowledge of dementia and its care. The society organises activities such as informative talks and campaigns to increase public awareness of the condition.

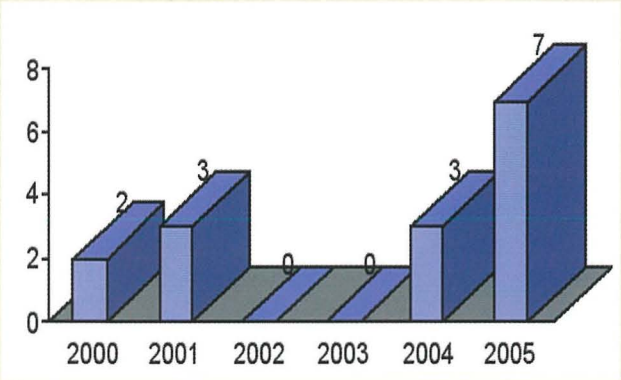
The Scars of Venus – Part II

by **Philip Carabot**
Consultant in GU Medicine
GU Clinic, Boffa Hospital

Sexually Transmitted Infections (STIs) are very common, with an estimated 330 million new cases yearly. They are the cause of serious morbidity (e.g. pelvic inflammatory disease, tubal infertility and ectopic pregnancies), as well as congenital and neonatal complications and even death. WHO estimates that, in Malta there could be up to 13,000 new cases per year, but this remains speculative. Part I (May 2006 - issue 03/06) discussed the local scenario with respect to Chlamydia gonorrhoea, syphilis & ano-genital words.

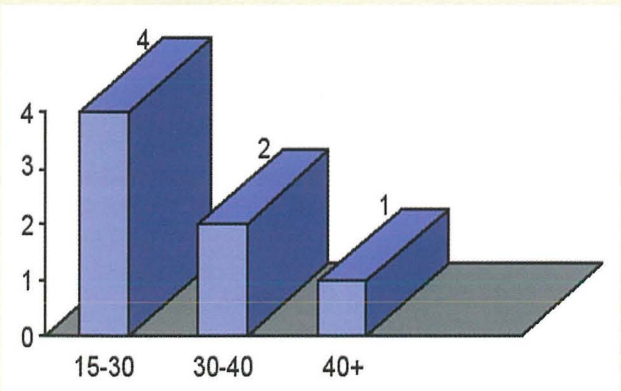
5. HIV

There were 7 cases of HIV diagnosed in 2005, significantly more than in previous years.



HIV cases (GU Clinic) 2000-2005

4 of these patients were male and 3 female; 4 heterosexual and the other 3 MSM.
The ages ranged from 17 to 49 years.

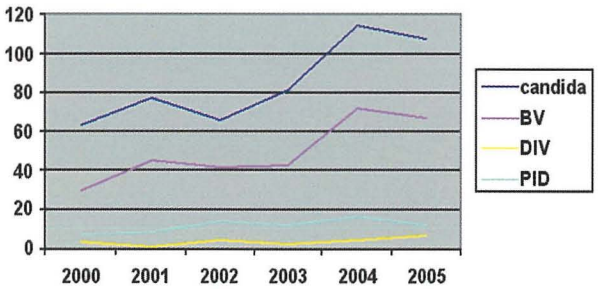


HIV cases (GU Clinic) by age-group

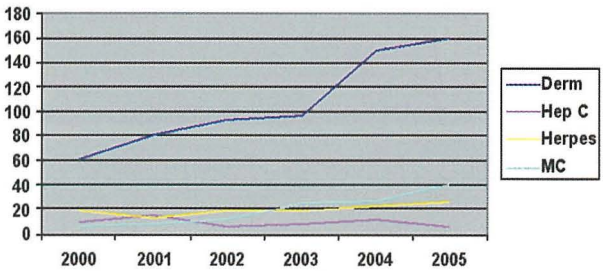
It is generally held that HIV disease is still uncommon in the Maltese Islands. This is mere speculation. It is the clinical impression of medical colleagues that the number of positive patients is about to increase significantly, a view the Clinic fully agrees with. We need as a priority to find out the true national prevalence and plan accordingly. A sudden unexpected increase in HIV positive patients requiring expensive ant-retroviral therapy, even if relatively small, could easily overwhelm our limited resources.

6. Other conditions

All other conditions have shown a steady increase.



Other conditions (1)
BV: bacterial Vaginosis, DIV: desquamative inflammatory vaginitis, PID: pelvic inflammatory disease.



Other conditions (2)
Derm: dermatoses, MC: molluscum contagious

Population sub-groups requiring targeted interventions

1. Young people

STIs are a major public health problem in people below 25 years. Young people are behaviourally more vulnerable to STI acquisition as they generally have higher numbers of sexual partners, greater number of concurrent partnerships and change partners more often than older age groups. Although consistent and proper use of condoms reduces the risk of STIs and unintended pregnancy, many young people may not have developed the skills and confidence to implement these strategies successfully.

continues on page 18

LESCOL® XL 80 mg

FLUVASTATIN SODIUM

Confidence without compromise

- Proven efficacy in lipid management[1]
- Proven cardiac protection[2]
- Proven antiatherogenic effects[3]
- Proven safety[1]

References:
(1) Ballantyne CM, et al. Efficacy and tolerability of fluvastatin extended-release delivery system: a pooled analysis. Clin Ther 2001;23:177-92. **(2)** Ballantyne CM, et al. Fluvastatin Reduces Cardiac Mortality in Patients with Coronary Heart Disease. Cardiovascular Drugs and Therapy 2004;18:67-75. **(3)** Inoue T, et al. Lipid-lowering therapy with fluvastatin inhibits oxidative modification of low density lipoprotein and improves vascular endothelial function in hypercholesterolemic patients. Atherosclerosis 2002;160:369-376

LESCOL®/LESCOL® XL

Presentation: Fluvastatin sodium. Lescol capsules containing the equivalent of 20 mg or 40 mg fluvastatin free acid. Lescol XL prolonged release tablets containing the equivalent of 80 mg fluvastatin free acid. **Indications:** For the reduction of TC, LDL-C, apoB, and TG, and the increase in HDL-C in patients with primary hypercholesterolemia and mixed dyslipidemia (Fredrickson Types IIa/IIb) as an adjunct to diet. Slowing of the progression of coronary atherosclerosis in patients with primary hypercholesterolemia, including mild forms, and coronary heart disease. Secondary prevention of major adverse cardiac events in patients with CHD after coronary transcatheter therapy. **Dosage:** Prior to initiating Lescol, the patient should be placed on a standard cholesterol lowering diet; dietary therapy should be continued during treatment. The recommended starting dose is 40 mg (1 capsule Lescol 40 mg) or 80 mg (2 capsules Lescol 40 mg once daily in the evening or 1 tablet Lescol XL 80 mg at any time of day). 20 mg (1 capsule Lescol 20 mg) may be adequate in mild cases. **Contraindications:** Hypersensitivity to the drug or excipients. Active liver disease or unexplained, persistent elevations in serum transaminases. Pregnancy, lactation, women of childbearing potential unless they are taking adequate contraceptive precautions. **Precautions/Warnings:** Caution is required in patients with a history of liver disease or heavy alcohol consumption, with unexplained diffuse myalgias, muscle pain/tenderness/weakness, and marked elevation of creatine kinase (CK) values. In patients with pre-disposing factors for rhabdomyolysis, the CK-level should be measured prior to treatment initiation. Caution with co-administration of fibrates, nicotinic acid and ciclosporin. **Interactions:** Fibrates; nicotinic acid; fluconazole; ciclosporin; bile acid-sequestrants; rifampicin; phenytoin; oral anticoagulants. **Adverse reactions:** Dyspepsia, abdominal pain, nausea, headache, insomnia. Rare cases of hypersensitivity reactions (mainly rash and urticaria), myalgia, muscle tenderness/weakness, myopathy. Very rare cases of thrombocytopenia, paraesthesia, dysaesthesia, hypo-aesthesia, vasculitis, hepatitis, other skin reactions (e.g. eczema, dermatitis, bullous exanthema), face oedema, angioedema, rhabdomyolysis, myositis, lupus erythematosus-like reactions. Elevation of transaminase and CK levels. **Packs:** Country specific. **Note:** Before prescribing consult full prescribing information.

NOVARTIS

NOTE: BEFORE PRESCRIBING CONSULT FULL PRESCRIBING INFORMATION - AVAILABLE FROM NOVARTIS PHARMA SERVICES INC.

LES Ad 6/06 MT

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United Kingdom

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Novartis Pharma Services,
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Valletta CMR 01
Malta
Tel.: +356 22983217

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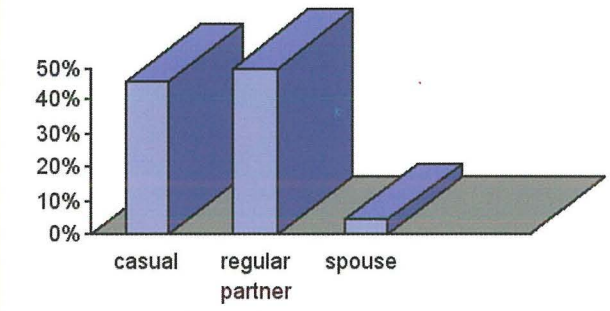
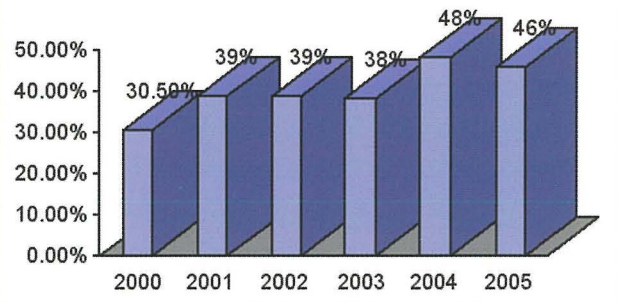
The Scars of

Contacts



Young people- contacts 2005



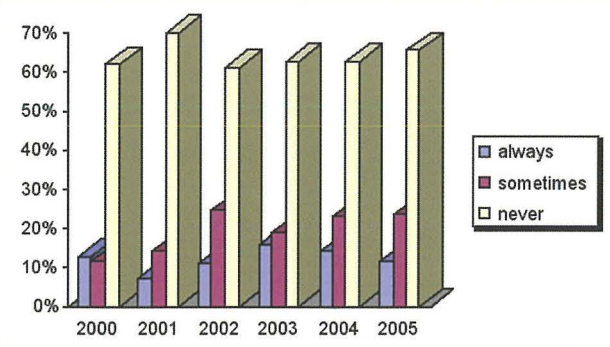
Young people-casual contacts 2000-2005

The rate of admitted casual sex has steadily increased (30.5% in 2000 to 46% in 2005). The seemingly high level of regular partnerships need to be tempered by the fact that many young people, specially teenagers, consider a few weeks old relationship as 'steady', and the rate of partner change is high.

Condom use

Consistent condom use remains low at 11.5% with 65.5% of the young never using one.

Comparing condom use over the last 6 years,



Young people – condom use (2000-2005)

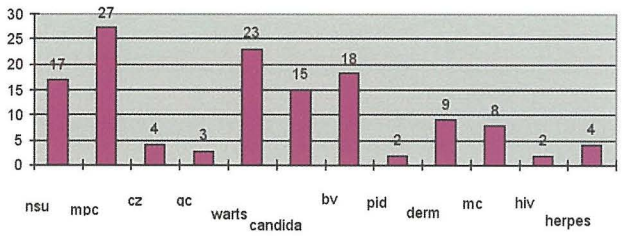
It is apparent that there has been no improvement. If anything the situation seems worse with 11.5% using condoms consistently in 2005, (compared to 14% in 2004), and 65.5% never using one, (compared with 63% in 2004).

23% of the young females (65 of 282) used contraception. Of these 89% used the OCP.

37% (232 of 389) admitted to taking illicit drugs at least occasionally. Looking at teenagers (13-19 years) as a separate sub-group, drug was somewhat higher at 40%. Marijuana was by far the most popular drug used in both groups.

28% (175 of 621) admitted to anal sex, which is a known high risk act. 65% of those that admitted to anal sex were heterosexual. The rate of anal sex in the teenage group was 30%.

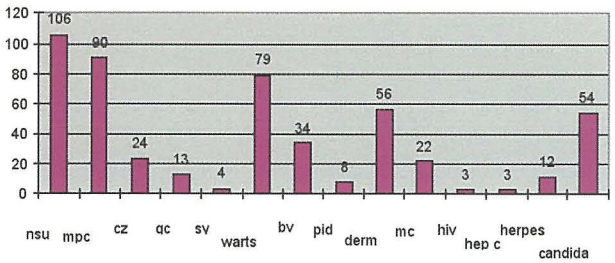
As to the conditions diagnosed, the young suffered 51% of the total seen (508 of 997).



Conditions diagnosed in the young (13-25 years)

Of particular note are the 24 cases of chlamydia, 13 cases of gonorrhoea, 4 cases of syphilis, 8 of PID, and 3 cases each of HIV and Hepatitis C.

The teenage sub-group suffered 13.2% of the total pathology diagnosed (132 of 997conditions).



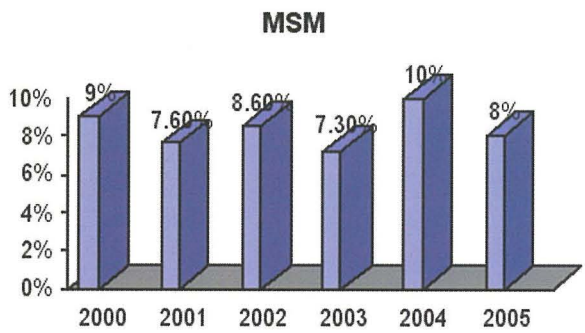
Conditions diagnosed in the young (13-19 years)

Of particular note are the 2 cases of HIV.

Whatever safer sex messages are being propagated, they are clearly not enough.

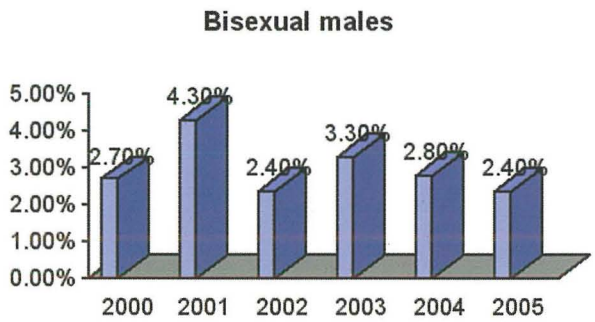
2. Homosexual/Bisexual men

8% of all new male patients were MSM and 2.4% were bisexual.

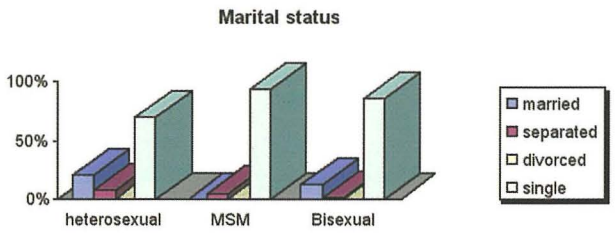


MSM attendances 2000-2005

Venus – Part II

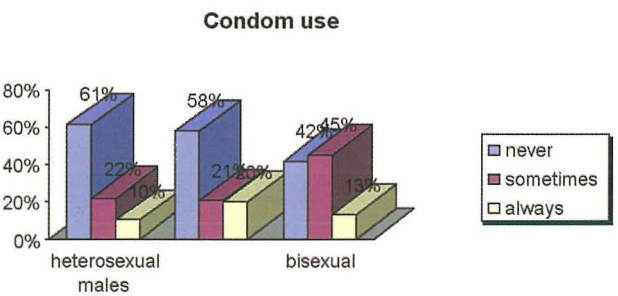


Bisexual attendances 2000-2005



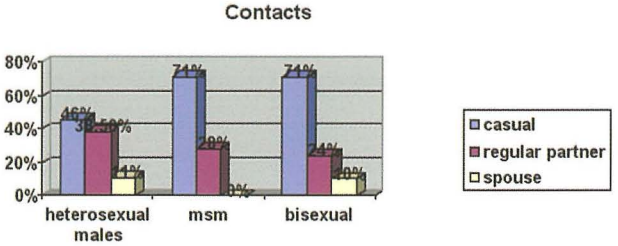
Comparison marital status – heterosexuals/MSM/bisexuals

13% of bisexuals are married, and when they do have extra-marital sex they always seem to do so with another male. How many of these married bisexuals are really gay but have not yet come to terms with it ?



Condom use – heterosexuals/MSM/bisexuals.

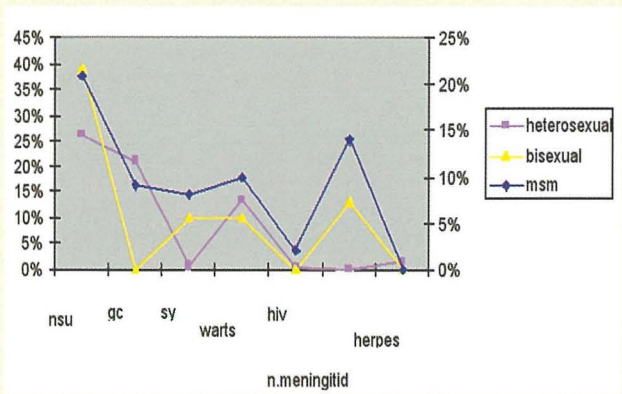
The percentage of those who always use a condom is very low in all three groups. A sub-group of gay men are known for poor condom use. However in this study MSM fared better than the heterosexual males, 20% and 10% respectively. This does not hide the very poor rate of condom use in all three groups, a serious problem that needs to be addressed.



Contacts-heterosexuals/MSM/bisexuals

The rate of casual sex is very high in all groups but particularly high in the MSM and bisexual groups (71% in both).

Asked about anal sex, 19.5% of the heterosexual males admitted to it at least occasionally, while 93% of MSM and 80% of bisexuals admitted to it. The bisexual group is important and difficult to reach. Their high rate of anal sex, (a high risk activity), with invariably casual male contacts, makes them and their female contacts very vulnerable to disease.



Diagnosis – heterosexuals/MSM/bisexuals.

As to actual main disease diagnosed, significantly more serious disease was diagnosed among the MSM and Bisexuals. This is no doubt at least in part due to the high rate of casual sex and poor condom use.

Hepatitis B vaccine was offered to all MSM. 25 vaccines were given in 2004, and 44 in 2005. Initially the standard regime of 3 doses at 0, 1 and 6 months was used. This resulted in a failure to finish the full course in 36% of cases.

It was therefore decided (April 2005) to change the schedule to the ultra-rapid regimen of 0, 7, 21days, with a routine booster at 12 months to encourage compliance. The failure to finish the course, in fact, dropped to 7%. The anti-body response has been satisfactory in spite of the accelerated course.

3. The married (and separated) groups

The married, 17.5% of the total of new patients, is an interesting group, especially when compared to the 'separated' one, which makes up 10% of the total.

Of the married group (224 patients), four declared themselves to be bisexual (3 males and 1 female). Eight in the separated group said that they were not heterosexual. One was bisexual, one lesbian and six were gay.

continues on page 22

Abdominal Wall Hernias: Imaging with Spiral CT

continued from page 2

Complications of Hernias:

The most common complications of abdominal wall hernias are bowel obstruction secondary to the hernia, incarceration (Figure 4), and strangulation. These complications can often be detected at clinical evaluation. Presenting symptoms may include abdominal pain, vomiting, and distention. Physical examination may reveal a firm, tender abdominal wall mass. Abdominal distention, dehydration, or peritoneal signs eventually become manifest.

After adhesions, abdominal wall hernias are the second leading cause of small bowel obstruction (10%–15% of cases). Colonic obstruction caused by abdominal wall hernia is uncommon.

Most cases of bowel obstruction secondary to abdominal wall hernia occur after incarceration and strangulation. In these cases, bowel obstruction occurs with the transition point at the level of the hernia. Key CT findings include *(a)* dilated bowel proximal to the hernia and *(b)* normal-caliber, reduced-caliber, or collapsed bowel distal to the obstruction. Other findings may include tapering of the afferent and efferent limbs at the hernia defect, dilatation of the herniated bowel loops, and faecalization of small bowel contents proximal to the obstruction. Findings of strangulation may also be observed.

Incarceration refers to an irreducible hernia and is diagnosed clinically when a hernia cannot be reduced or pushed back manually. The diagnosis of incarceration cannot be made with imaging alone but can be suggested when herniation occurs through a small defect and the hernia sac has a narrow neck (Figure 7).

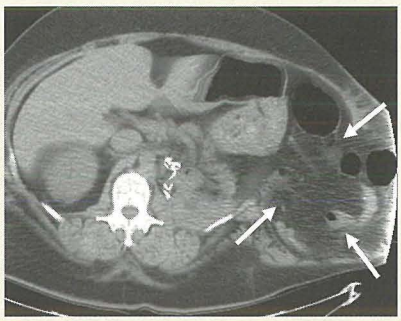


Figure 6: *Diffuse lumbar hernia (arrows) in a 58-year-old man after left nephrectomy for renal cell carcinoma. Note the extensive herniation of the mesentery and bowel loops through the wall defect*

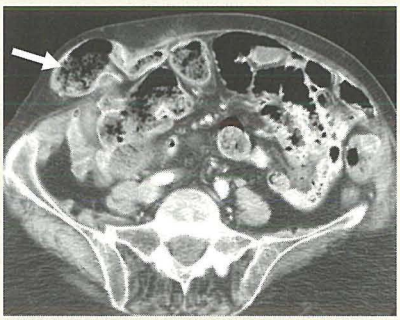


Figure 7: *Incarcerated incisional hernia in a 78-year-old man. Herniation of stool-filled, thin-walled colon (arrow) is seen through a narrow abdominal wall defect. The patient was asymptomatic but presented with acute abdomen 1 month later. The sac of the hernia eventually contained extraluminal fluid and obstructed colon*

Impending strangulation of these hernias should be suspected when there is free fluid within the hernia sac, bowel wall thickening, or luminal dilatation (Figure 7). Strangulation refers to ischemia caused by a compromised blood supply. It usually occurs when the hernia defect obstructs the afferent and efferent bowel loops, creating a closed loop within the herniated bowel.

Surgical Repair

Several different surgical procedures are used to repair abdominal wall hernias, ranging from open or laparoscopic suture repair to the use of mesh. To date, tension-free mesh repair has been accepted as the standard surgical technique for the majority of abdominal wall hernias, regardless of defect size, and is most commonly used.

Occasionally tissue expanders may be required to help stretch the abdominal wall to avoid tension. Complications after surgical hernia repair may occur in up to 50% of cases, depending on surgical technique and the status of the hernia sac vasculature. Approximately one-half of these complications may require surgical reintervention. Complications include hernia recurrence, fluid collections, infections, small intestinal obstruction due to adhesions and mesh-related problems (such as mesh shrinkage due to fibrosis).

Dr Pierre Vassallo can be reached at the Medical Imaging Centre on 21 491 200 or by email on pvassallo@mic.com.mt

Safety of Labile Blood Products

continued from page 8

5. Quality Systems – the development and continuous improvement of the blood transfusion service is based on Total Quality Implementation. This involves quality management, quality planning, quality assurance and quality control. The EU Directive 2002/98/EC sets the legal framework for quality in blood establishments.[12] Article 2 of Directive 2005/62/EC sets out the Quality system standards and specifications, which are elaborated in the relevant annex with the same directive.[13]

Conclusion

The provision of a safe and sustainable blood supply reflects the mission statement of the National Blood Transfusion Service. Obviously blood is not 100% safe though all the necessary measures have been implemented. Like any pharmaceutical agent that can potentially have harmful effects (though life saving) it should be used appropriately. Just as there are quality systems in the collection, processing, screening and distribution of blood, quality systems to improve the clinical use of blood should be developed.

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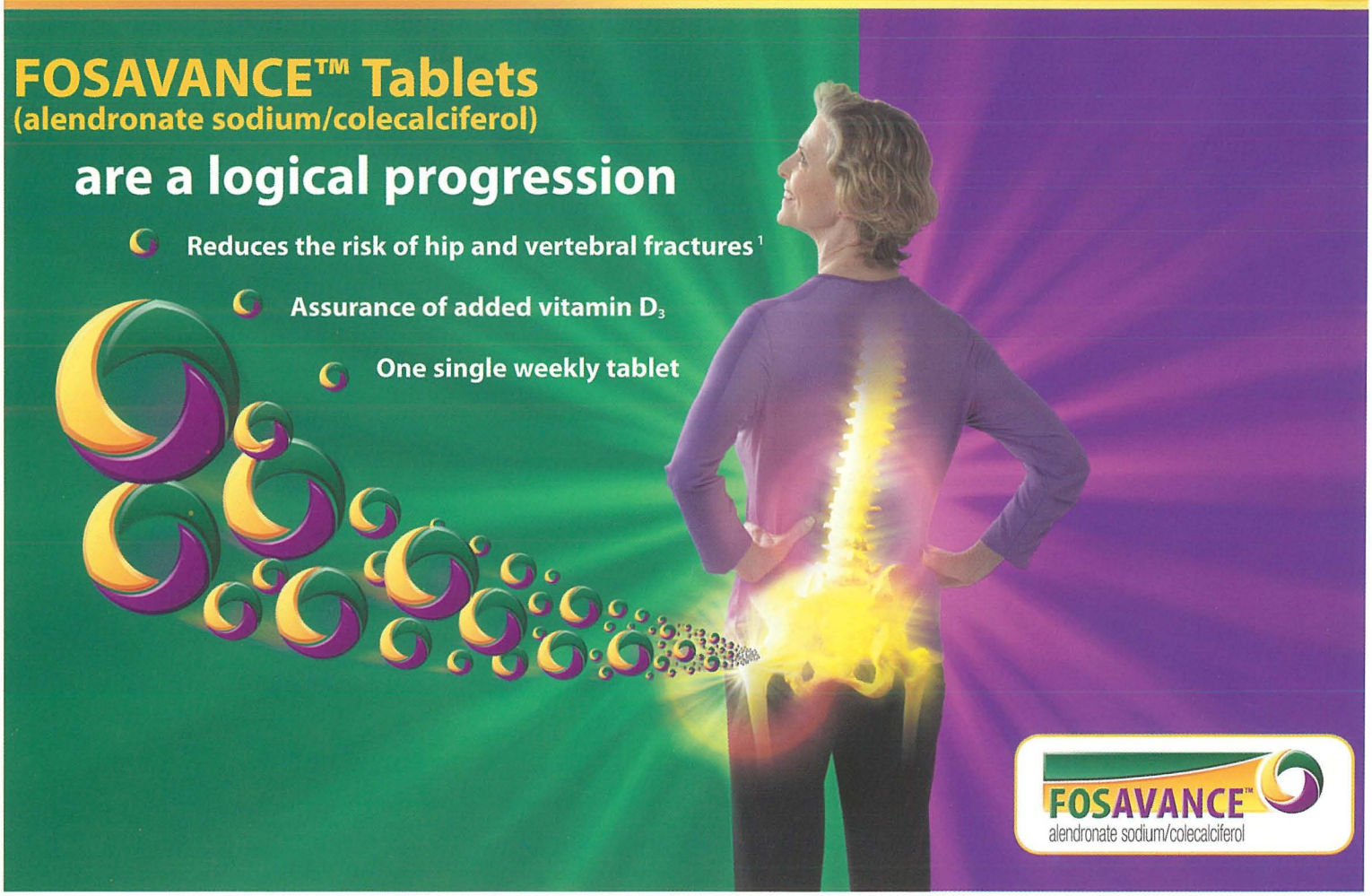
13. Commission Directive 2005/62/EC of 30th September 2005; implementing Directive 2002/98/Ec of the European parliament and of the council as regards community standards and specifications relating to a quality system for blood establishments.

TREATING YOUR POST-MENOPAUSAL OSTEOPOROSIS PATIENTS

FOSAVANCE™ Tablets
(alendronate sodium/colecalciferol)

are a logical progression

- Reduces the risk of hip and vertebral fractures [1]
- Assurance of added vitamin D_3
- One single weekly tablet



FOSAVANCE™ Tablets (70 mg Alendronic Acid as Alendronate Sodium Trihydrate and 70 micrograms [2,800 IU] Colecalciferol [vitamin D_3])

ABRIDGED PRODUCT INFORMATION

Refer to Summary of Product Characteristics before prescribing.

PRESENTATION

Capsule-shaped, white to off-white tablets marked with an outline of a bone image on one side, and '710' on the other, containing 70 mg alendronic acid as alendronate sodium trihydrate and 70 micrograms (2,800 IU) colecalciferol (vitamin D_3).

USES

Treatment of post-menopausal osteoporosis in patients at risk of vitamin D insufficiency. 'Fosavance' reduces the risk of vertebral and hip fractures.

DOSAGE AND ADMINISTRATION

The recommended dosage is one (70 mg/ 70 microgram) tablet **once weekly**.
Patients must be advised to follow the instructions below:
For adequate absorption of alendronate: Take at least 30 minutes before the first food, beverage, or medicinal product (including antacids, calcium supplements and vitamins) of the day with plain water only. Other beverages (including mineral water), food and some medicinal products are likely to reduce the absorption of alendronate. *The following instructions should be followed exactly in order to minimise the risk of oesophageal irritation and related reactions:*

- Swallow 'Fosavance' only upon arising for the day with a full glass of water (not less than 200 ml or 7 fl.oz.).
- Do not chew the tablet or allow the tablet to dissolve in the mouth because of a potential for oropharyngeal ulceration.
- Do not lie down until after the first food of the day which should be at least 30 minutes after taking the tablet.
- Do not lie down for at least 30 minutes after taking 'Fosavance'.
- Do not take at bedtime or before rising for the day.

Patients should receive supplemental calcium if intake is inadequate. Additional supplementation with vitamin D should be considered on an individual basis taking into account vitamin D intake from vitamins and dietary supplements. Equivalence of 2,800 IU of vitamin D_3 weekly in 'Fosavance' to daily dosing of vitamin D 400 IU has not been studied. *Use in the elderly:* No dosage adjustment is necessary. *Use in renal impairment:* No dosage adjustment is necessary for patients where GFR is greater than 35 ml/min. Alendronate is not recommended for patients with renal impairment where GFR is <35 ml/min. *Use in children:* Not recommended.

CONTRA-INDICATIONS

Oesophageal abnormalities and other factors which delay oesophageal emptying, such as stricture or achalasia. Inability to stand or sit upright for at least 30 minutes. Hypersensitivity to alendronate or to any of the excipients. Hypocalcaemia.

PRECAUTIONS

Alendronate can cause local irritation of the upper gastro-intestinal mucosa and potentially worsen any underlying disease. Use with caution in patients with active upper gastro-intestinal problems, such as dysphagia, oesophageal disease, gastritis, duodenitis, or ulcers, or with a recent history (within the previous year) of gastro-intestinal disease such as peptic ulcer, or active gastro-intestinal bleeding, or surgery of the upper gastro-intestinal tract other than pyloroplasty. Oesophageal reactions (sometimes severe and requiring hospitalisation), such as oesophagitis, oesophageal ulcers and oesophageal erosions, rarely followed by oesophageal stricture, have been reported in patients receiving alendronate. Physicians should be alert to any signs or symptoms of a possible oesophageal reaction, and patients should be instructed to discontinue alendronate and seek medical attention if they develop symptoms of oesophageal irritation such as dysphagia, pain on swallowing, retrosternal pain, or new or worsening heartburn. The risk of severe oesophageal adverse reactions appear to be greater in patients who fail to take alendronate properly and/or continue to take alendronate after developing symptoms suggestive of oesophageal irritation. It is very important that the full dosing instructions are provided to, and understood by the patient. Patients should be informed that failure to follow these instructions may increase their risk of oesophageal problems. While no increased risk was observed in extensive clinical trials with alendronate, there have been rare (post-marketing) reports of gastric and duodenal ulcers, some severe with complications. A causal relationship cannot be ruled out. Bone, joint and/or muscle pain has been reported in patients taking bisphosphonates. In post-marketing experience, these symptoms have rarely been severe and/or incapacitating. From start of treatment, onset of symptoms varied from one day to several months. A subset had recurrence of symptoms when rechallenged. Patients should be instructed that if they miss a dose of 'Fosavance' , they should take one tablet on the morning after they remember. They should not take two tablets on the same day, but should return to taking one tablet once a week, as originally scheduled on their chosen day. Cause of osteoporosis other than oestrogen deficiency and ageing should be considered. Correct hypocalcaemia before initiating therapy. Other disturbances of mineral metabolism should also be effectively treated. The content of vitamin D in 'Fosavance' is not suitable for correction of vitamin D deficiency. In patients with these conditions, serum calcium and symptoms of hypocalcaemia should be monitored during therapy with 'Fosavance'. *Colecalciferol:* Monitor urine and serum calcium in patients with disease associated with unregulated overproduction of calcitriol (e.g. leukaemia, lymphoma, sarcoidosis) as vitamin D_3 may increase the magnitude of hypercalcaemia and/or hypercalciuria. Patients with malabsorption may not adequately absorb vitamin D_3. *Excipients:* Patients with rare hereditary problems of fructose intolerance, galactose intolerance, the Lapp lactase deficiency, glucose-galactose malabsorption or sucrase isomaltase insufficiency should not take 'Fosavance' because it contains lactose and sucrose. *Drug interactions* Food, beverages (including mineral water), calcium supplements, antacids, and some oral medicinal products may interfere with absorption of alendronate. Therefore, patients must wait at least 30 minutes after taking 'Fosavance' before taking any other medicinal product. *Use in pregnancy and lactation:* alendronate has not been studied in pregnant or breast-feeding women and should not be given to them.

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SIDE EFFECTS

The following adverse experiences have been reported during clinical studies and/or post-marketing use of alendronate. No new adverse reactions have been identified for 'Fosavance'. *Common (≥1.0% and <10%) Gastro-intestinal:* abdominal pain, dyspepsia, constipation, diarrhoea, flatulence, oesophageal ulcer, dysphagia, abdominal distension, acid regurgitation. *Musculoskeletal:* musculoskeletal (bone, muscle or joint) pain. *Neurological:* headache. *Uncommon (≥0.1% and <1%) Gastro-intestinal:* nausea, melaena, vomiting, gastritis, oesophagitis, oesophageal erosions. *Skin:* rash, pruritus, erythema. *Rare (≥0.01% and <0.1%) Body as a whole:* hypersensitivity reactions including urticaria and angioedema. Transient symptoms as in an acute-phase response. Symptomatic hypocalcaemia, often in association with predisposing conditions (see 'Precautions'). *Gastro-intestinal:* oesophageal stricture, oropharyngeal ulceration, upper gastro-intestinal PUBs (perforation, ulcers, bleeding) (see 'Precautions') localised osteonecrosis of the jaw, generally associated with tooth extraction and/or local infection, often with delayed healing. *Skin:* rash with photosensitivity. *Special senses:* uveitis, scleritis, episcleritis. Isolated cases of severe skin reactions, including Stevens-Johnson syndrome and toxic epidermal necrolysis have been reported. *Laboratory test findings* In clinical studies, asymptomatic, mild and transient decreases in serum calcium and phosphate were observed in approximately 18 and 10%, respectively, of patients taking alendronate 10 mg/day versus approximately 12 and 3% of those taking placebo. However, the incidences of decreases in serum calcium to < 8.0 mg/dl (2.0 mmol/l) and serum phosphate to ≤2.0 mg/dl (0.65 mmol/l) were similar in both treatment groups.

PACKAGE QUANTITIES AND BASIC NHS COST

'Fosavance' Tablets — £22.80 for 4 tablets.

POM — Date of review: September 2005

Marketing Authorisation Numbers:

'Fosavance' Tablets — EU/1/05/310/02

Marketing Authorisation Holder:

Merck Sharp & Dohme Limited
Hertford Road, Hoddesdon, Hertfordshire EN11 9BU, UK

REFERENCES

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MSD

Merck Sharp & Dohme Limited
Hertford Road, Hoddesdon, Hertfordshire EN11 9BU

Editorial note

Ethelwald Emilius Vella
An appreciation

Ethelwald Emilius Vella was part of the Royal Army Medical Corps, was the editor of the RAMC Journal for many years and head of the Pathology Laboratory Services at Millbank. He had joined the army in Malta in 1941 as an officer cadet in the University Students Battalion of the RMA. After graduation, he joined the RAMC and reached the top rank of colonel by the time he retired to the village of Manikata.

Whilst expressing its depeest sympathy to his family and friends, the editorial board is honoured to publish this letter sent by Ethelwald Emilius Vella. Malta has not only lost a doctor ... it has lost a great man whose beliefs, values and contributions created a benchmark for the whole medical profession.

Vaccines – today's and tomorrow's

There is a dictum attributed I believe to Almroth Wright, a prime promoter of immunological procedures: "The Physician of tomorrow will be a Vaccinator"

The foresight and wisdom of this saying is borne out by Drs Christopher Barbara and Tonio Piscopo in your issue 03/06 (May 2006).

Their two papers are informative and stimulating, covering various viral vaccines (cervical cancers), protozoal vaccine (malaria) and bacterial vaccines in between.

The reader would have noticed inter alia the mention of edible vaccines; these would eliminate the need for sterile syringes and needles. I have seen somewhere a proposal for bioengineered tomatoes as vehicles for Flu vaccines, with an eye on the ominous threatening Bird Flu Pandemic.

En passant Almroth Wright (1861 - 1947), a Professor of Pathology of the British Army Medical Services, ended his professional career as Professor of Pathology and Microbiology and Director of the Inoculation Department (later Wright-Fleming Institute) at St Mary's, Paddington.

Of some local interest one may record that the first immunological target of Almroth Wright was Malta fever. As a true scientist and firm believer in immunization he injected himself first with a dead culture vaccine and followed this with a live culture. And he went down for several weeks with Malta fever.

Colonel (Retd) Ethelwald Emilius Vella *MD FRCPath L/RAMC*

The Scars of Venus – Part II

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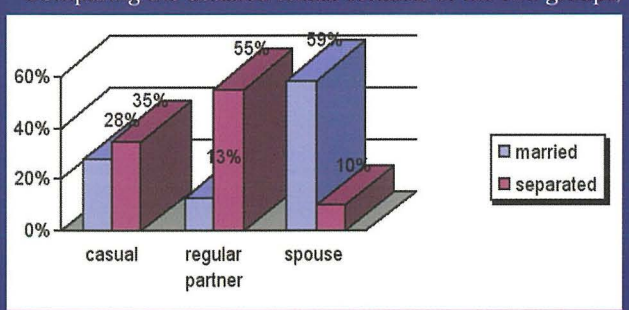
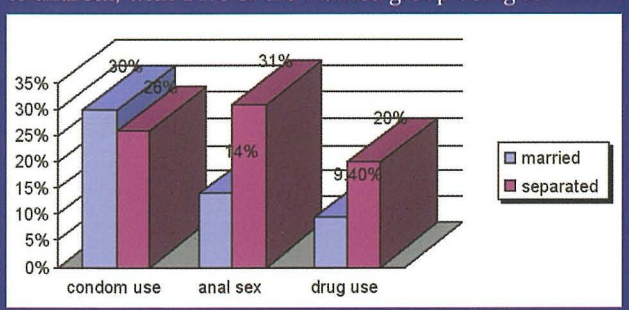
Comparing the declared sexual contacts of the two groups,



Married group – sexual contacts.

The regular partner rate of the separated group seems very similar to the spouse group of the married one. Is this a tendency towards stable relationships irrespective of marital status?

70% of the married group and 74% of the separated group never used condoms. 31% of the separated group admitted to anal sex, with 14% of the married group doing so.



Married group – condom use/anal sex/drug use.

Asked about illicit drug use 9.4% of the married group admitted to using illicit drugs, at least occasionally, compared to 20% of the separated group.

One serious problem is the great difficulty of persuading the index patient to notify the 'innocent' spouse of the potential disease.

Conclusion

Although the actual number of the classical STIs is not apparently high, it must be borne in mind that this is very probably the tip of the iceberg. The GU Clinic does not see all the STIs of the Maltese Islands.

Of concern is the high level of casual sex, especially amongst the young compounded by very poor condom use. It is therefore only a question of time before the STIs, including HIV, will become a major problem. It is useless burying our heads in the sand and pretending that all is well. We need with urgency, regular prevalence studies to monitor disease. We cannot possibly mount sensible campaigns without this information.

We need to seriously revisit the sex education in schools as well as our sexual health promotion which needs to become much more aggressive. We need to act now, and decisively.

I tell you naught for your comfort,
Yea, naught for your desire,
Save that the sky grows darker yet
And the sea rises higher.

G.K. Chesterton, Ballad of the White Horse

Stem Cell Research and Cloning

by **Michael Asciak** *MD MPhil MP*
Chairman Bioethics Consultative Committee

The use of human stem cells for research purposes has been going on for some time now. It is important to state that there is nothing intrinsically wrong with stem cell research as such. New opportunities in transplanting tissue that is histocompatible and not subject to rejection, is an exciting field which can lead to substantially reducing much suffering and avoid immuno-suppressive treatment that is currently sustained by patients needing a transplant. Research in this area is developing at a fast pace

The ethical problems with stem cell research are reserved for so-called embryonic stem cell research. There are sources of embryonic stem cells that are available from cord blood (collected from a cut umbilical cord just after delivery) which do not present any problems. The problem arises when researchers harvest stem cells by the destruction of the human embryo. Stem cells are naturally available as tissue found in the embryo in the first few days of development. Unfortunately these cells may only be obtained by the destruction of the embryo itself or by inhibiting the normal development of totipotent cells into an embryo. Some justify this as a necessary price to pay for research to proceed, others argue that spare embryos left over from 'in vitro', fertilization would die anyway, so it would be better to get some positive benefit out of them, before they become worthless. Whichever way one looks at this, two facts are indisputable. The first is, that human life is being used for research purposes and destroyed in the process. The second is, that human beings are being commodified on an increased scale and being rendered an object of financial and economic gain, the demand will increase the supply !

The ethical problems associated with the destruction of human embryos, obtained directly from reproductive technology (IVF) programmes, are not the only ones. Some countries have started the procedure of cloning human embryos first, so that iso-immune cells can be obtained which can be used in transplantation. That is, an individual's cells are first cloned by nuclear transfer (transferring the cell nucleus as happens in reproductive cloning), and the resulting embryo is then destroyed to obtain cells that are immunologically compatible with the cells of the donor, thereby obtaining good tissue for transplantation. Here the ethical and legal problems mentioned in the Additional Protocol on the Prohibition of Cloning of Human Beings of the Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (Convention on Human Rights and Biomedicine / Oviedo Convention) of the Council of Europe are still inherent. Moreover there is a breach of the principles of Liberty, Individuality and Equality addressed in the Convention for the Protection of Human Rights and Fundamental Freedoms which has been ratified by Malta and is now transposed into Maltese legislation – in the European Convention Act of the same Council of Europe. Reproductive and therapeutic cloning both breach these principles, and the Protocol considers both in the same light, without distinguishing between them, and without even referring to the word cloning, in the relevant article, prohibits the voluntary creation of an individual with the same genetic material.

Other ethical problems that are encountered in human stem cell research are surely those of patenting and ownership. Do the harvested cells belong to the donors or to the researchers? Should they be patented at all? What about the rights of the sacrificed embryo, which is the human being from which the cells originally emanated ? These considerations require profound and deep analysis. Having said this, Maltese legislation prohibits the granting of patents for 'processes for cloning the human body, processes for modifying the germ line genetic identity of the human body and uses of the human embryo for industrial or commercial purposes'.

Another problem with embryonic stem cell research, concerns cloning for therapeutic purposes used with derived embryonic stem cells. Cloning, contrary to what has been widely held, is not something new! Nature has been using it for thousands of years to reproduce lesser orders of animals and plants. As evolution progressed slowly, nature developed a different and better way for reproduction to take place, with better mix age of genes and physical features, thereby improving a particular species' resistance to being wiped out by environmental change and improving the evolutionary profile of that particular species. The previous type of reproduction involving cloning was called 'asexual' while the newer revolutionary type was called 'sexual'. In man, sexual reproduction needs no introduction! Asexual reproduction involving cloning also occurs naturally at a particular stage of human development 'in utero' when identical twins are produced.

Man's fixation with cloning, that is producing an individual whose genes are practically identical to another human being, can be brought about by two processes. One involving the splitting of a developing embryo by the passage of an electrical impulse through that embryo. The other involves the transference of a somatic nucleus into an ovum. This is called nuclear transfer. Once a human being has been cloned successfully and this is now proceeding in several countries of the world, he or she might be implanted into a uterus to develop till birth and allowed to be born naturally. This is termed 'reproductive cloning'. Otherwise the cloned embryo is allowed to develop for a few hours or days inside a dish in a laboratory where it is then cannibalised for its body parts including the much sought after 'embryonic stem cells'. This is termed 'therapeutic cloning', funnily enough.

Probably our obsession with cloning stems from the fact that a duplication of our genetic heritage conjures up profound perceptions or images of our immortality, which is far from the truth, as a particular personal life is not only composed of a genetic component but also of a developmental environmental experience recorded in that particular psyche. Therefore, two identical twins are not the same human beings. They are different human beings with the same genetic code. What fundamental human rights are breached by the act of cloning? Without going into the problem of the wholesale wilful destruction of human embryos for research and other purposes involved in therapeutic cloning, which opens a chapter in its own right, I will now focus lightly on the legal problems concerned with reproductive cloning.

The very act of reproducing or trying to reproduce another human being, either living or dead, breaches the right of every human being of being unique and irreproducible. This breach applies to both the original and the copied clone. Cloning therefore breaches the fundamental right of every human being to his personal freedom and liberty. It also breaches his fundamental right to equality in that every human being has an equal right to free personal development devoid of any shackles to past or present physical or mental predeterminations.

continues on page 26

The newest addition to pro.activ range of foods:

The miniyogurt drink

The Flora pro.activ mini yogurt drink is a new member of the pro.activ range of foods enriched with plant sterols. The Flora pro.activ mini yogurt drink is convenient and easy to consume so it can easily be incorporated into a healthy diet to help consumers achieve optimum cholesterol-lowering benefits.

Flora pro.activ mini yogurt drink

- semi-skimmed, mini yogurt drink
- enriched with plant sterols (2 g per bottle)
- easy to consume, a singe serve, 100g
- available in original, orange and strawberry flavours
- contains at least $5x10^9$ live bacteria of the probiotic strain Bifidobacterium lactis Bb12 plus live Streptococcus thermophilus and Lactobacillus bulgaricus yogurt bacteria

Flora pro.activ portions

Independent clinical studies show that moving to a healthy diet including 2-3 grams of plant sterols per day leads to a 10-15% reduction in LDL-cholesterol levels within 3 weeks. This can be achieved by consuming 3 portions of Flora pro.activ foods (spread, milk drink, yogurt) daily or now with one Flora pro.activ mini yogurt drink daily.

Plant sterols in dairy foods lower total and LDL-cholesterol

The efficacy of plant sterol enriched low fat foods such as dairy foods (including milk and yogurts) has been investigated. Studies of dairy foods enriched with plant sterols demonstrate that daily intake of 1-3g of plant sterols effectively reduces LDL-cholesterol by 5-16% compared with control group [Clifton et al., 2004; Mensink et al., 2002; Noakes et al, in press; Thomsen et al., 2004; Volpe et al., 2001].

Efficacy of plant sterol ester enriched mini yogurt drinks

The significant cholesterol-lowering effect of a plant sterol ester enriched mini yogurt drink has been established in an as yet unpublished clinical trial. The results showed that daily intake of the mini yogurt drink was effective in significantly lowering LDL-cholesterol both when consumed on an empty stomach or with a meal. The effect was larger when the mini yogurt drink was consumed with a meal [unpublished data].

NUTRITION INFORMATION:			
TYPICAL VALUES	ORIGINAL PER 100g/PER BOTTLE	STRAWBERRY PER 100g/PER BOTTLE	ORANGE PER 100g/PER BOTTLE
Energy	367kJ/87kcal	367kJ/87kcal	367kJ/87kcal
Protein	2.6g	2.6g	2.6g
Carbohydrate	12.5g	12.5g	12.5g
of which added sugars	9.6g	9.6g	9.6g
Fat (excluding sterols)*	2.9g	2.9g	2.9g
of which saturates	1.1g	1.1g	1.1g
of which monounsaturates	0.8g	0.8g	0.8g
of which polyunsaturates	1.0g	1.0g	1.0g
Cholesterol	Trace	Trace	Trace
Fibre	Trace	Trace	Trace
Sodium	0.05g	0.05g	0.05g

*sterols do not contribute to the energy value

Note: contains plant sterol esters 3.4% (equivalent to plant sterols 2%)

Flora pro.activ foods are now successfully marketed in most European countries following independent review by the relevant regulatory authorities. Milk and yogurt products have been on the market in Europe since April 2004. Novel foods approval for the Flora pro.activ mini yogurt drink falls under the approval that Unilever obtained from the European Commission for milk and yogurt products.

Intake recommendations

Flora pro.activ mini yogurt drink is enriched with 2g of plant sterols that have been proven to lower cholesterol. For optimal cholesterol lowering, the pro.activ mini yogurt drink should be consumed with a meal as part of a healthy diet and lifestyle. The pro.activ mini yogurt drink can be used in conjunction with other foods in the pro.activ range to add variety to the eating pattern. On some days a Flora pro.activ mini yogurt drink (2g of plant sterols) can be consumed, while on others 3 portions from the existing Flora pro.activ spread, milk drink and yogurt range (0.75g of plant sterols per serving) can be consumed. Flora pro.activ foods are part of a healthy diet and not a substitute for one. It is recommended to consume up to 3 grams of plant sterols each day as higher intakes will not result in additional cholesterol lowering.

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Just One a Day.
Such a convenient choice for your cholesterol patients.

- *One Becel pro·activ yoghurt mini drink (100 g) contains 2g of plant sterols. Clinical studies have proven that this is the optimal dose to achieve substantial cholesterol-lowering [1, 2].*
- *Plant sterols block the absorption of cholesterol resulting in dramatic lowering of the LDL-cholesterol level [3, 4].*
- *For best results consume with a meal, as part of a healthy diet.*

1 Law M. BMJ 2000; 320: 861-864.
2 Katan MB et al. Mayo Clin Proc 2003; 78: 965-978.
3 Jones PJ et al. J Lipid Res 2000; 41: 697-705.
4 Pouteau EB et al. Eur J Nutr 2003; 42: 154-164.

In order to reduce cholesterol levels and achieve a healthier heart, World Heart Federation recommend taking regular physical activity and eating a balanced diet rich in fruit and vegetables, low in saturated fats and including foods that contain plant sterols.

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Current Status of Avian/Pandemic Influenza

by **Tanya Melillo Fenech** *MD MSc*
Principal Medical Officer at Disease Surveillance Unit, Department of Public Health

The latest epidemiological update by WHO is the following:

1. The number of new countries reporting human cases increased from 4 to 9 after October 2005.
2. Half of the cases occurred in people under the age of 20 years; 90 per cent of cases occurred in people under the age of 40 years.
3. The overall case fatality rate was 56 per cent.
4. Assessment of mortality rates and the time intervals between symptom onset and hospitalization and between symptom onset and death suggest that the illness pattern has not changed substantially during the 3 years;
5. Cases have occurred all year round. However, the incidence of human cases peaked during the winter and spring in the northern hemisphere.

Although media has not been reporting much on the subject, two more human deaths have occurred in July in Egypt and Indonesia. The cumulative number of cases is 229 with 131 deaths as of 4 July. This week Spain has discovered H5N1 in a wild bird and Hungary has discovered the virus in poultry. H5N2 has been discovered in ostriches in South Africa.

Seasonal Vaccine

It is time to start encouraging our patients to book their seasonal vaccine. We succeeded in vaccinating 62 per cent of the total population last season and this has had an impact on both adult and children absenteeism during winter due to influenza like symptoms. I strongly urge General practitioners and Pharmacists to encourage your clients to take the jab again this year.

Some very interesting news from the Influenza June Market brief:
'New research from St. Jude Children's Research Hospital has suggested that the seasonal flu vaccine could be somewhat effective in preventing people dying from avian influenza. St. Jude influenza specialist, Robert Webster, has said that the seasonal vaccine will not prevent people becoming sick, but could prevent death. The results of this research has fuelled the argument for broadening the scope of seasonal flu vaccination.'

This season, the Maltese Health Authorities are offering the seasonal vaccination to a wider group including those persons whose occupation is directly involved with poultry and also to front liners including police, armed forces and civil protection staff.

A study in the New England Journal of Medicine published 6 July 06 based on a population based surveillance on disease burden of influenza among children concluded that the average annual rate of hospitalization associated with influenza is 0.9 per 1000 children. Between 50-95 clinic visits and 6-27 emergency visits per 1000 children occur at outpatients. The attack rates of influenza infection vary between 15-42 per cent among school children and these form a reservoir which increases the attack rate in younger children and old persons (both groups being at an increased risk of needing hospitalization for influenza and its complications).

Influenza may be important in the pathogenesis of acute otitis media during the influenza season: 3-5 per cent of children annually experience acute otitis media associated with influenza. Influenza and its complications has been reported to result in 10-30 per cent increase in the number of antimicrobial prescriptions prescribed to children.

The European Vaccine Manufacturers are **encountering delays in their production** for the coming season due to low manufacturing yield of 1 of the recommended strains H3N2. This will result in fewer doses initially from all suppliers and supply will spread over a longer period so vaccination will start in October and continue till the end of December.

The information is correct as on 13/7/2006.

For further information check the Disease Surveillance Unit Web Portal on http://www.health.gov.mt/dsu/.

Stem Cell Research and Cloning

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Legal instrumentation in a pan-European context, which concerns cloning is found within the remits of two institutions. The Council of Europe and the European Union. The former institution has adopted the Bioethics Convention of Oviedo, with a specific protocol on cloning, as mentioned above, which in effect outlaws both types of cloning (only for those who are signatories to the Convention). The European Union has adopted the Charter of Fundamental Rights which in effect, in article three, (the right to integrity of the person), indicates that the following must be respected: 'prohibition of the reproductive cloning of human beings'. Therapeutic cloning is not addressed in this charter. This charter will form part of the EU Constitution when the latter instrument is adopted by the EU. In the USA, reproductive cloning is forbidden, and President Bush has wisely forbidden the use of public federal funding for research in therapeutic cloning. The EU is still debating the use of EU funding for therapeutic cloning in specific countries. Since our accession to the EU, Malta has consistently voted 'no' to the use of EU funding for therapeutic cloning during the ministerial council meetings of the EU particularly so because it objects to the use of the procedure and also because it objects to any use of the funds which Malta pays into the EU coffers, being used to fund these procedures in other countries where it is allowed. Many countries also have their own national legislation on cloning procedures. For example Germany has very tight restrictions while the UK has a very liberal legal formulation allowing therapeutic cloning to proceed under the control of research ethics committees.

Incidentally, Malta has no national legislation on the subject (except the abortion law which would prohibit use of embryos for stem cells – therapeutic or research and the patents law). It has not signed the Bioethics Convention at all, nor any of its protocols including the one on cloning (Malta is only bound by the Convention for the Protection of Human Rights and Fundamental Freedoms incorporated into the Maltese European Convention Act, which does not mention cloning at all). All else is fair game barring the arguing in a potential court-case of banning the procedure due to our obligations from our own criminal law and those from our national commitment to the European Convention of Human Rights! Incidentally, the Court of Appeal in the Human Rights Court in Strasbourg has decided not to consider the fundamental rights included in the European Convention, as extended to children who are not yet born, although it does not prevent individual European countries from extending this right to children in utero if they so desire (in Malta, there is some legislation that gives rights to unborn children – mainly Civil Law but also in the latest Domestic Violence Act). Like many other issues in bioethics, Malta is still in its pre-embryonic stage or as a foreigner observed to me, in the Wild West and some effort is needed to remedy the situation soon!

Keeping up with the (Dow) Joneses – A Turbulent Start to the Third Millennium

by **J. G. P. Bonello**, *F.L.I.A., Managing Director*
Financial Planning Services Limited
Financial Adviser since 1967

The Dow Jones Industrial Average was first published on May 26, 1896. That same year the modern Olympics began in Athens and it is incidental that both the Olympics and the Dow, in their respective fields, are a professional measurement of performance

The Dow Jones is the oldest index still in use today and is considered the weather vane of the world's established stock markets, proved by the old bromide that "when the Dow sneezes, the rest of the world catches cold".

The original Industrial Average, which was based on the shares of 12 companies, represented all types of businesses except railway companies – since these had their own separate Railroad Average, comprised of 20 railway company shares.

In 1916, the Industrial Average was increased to 20 companies, and in 1938 to 30 – the same number as today. There is only one survivor from the 1938 list – General Electric.

In my Sunday Times column "Money Matters" of 25th April 1993, I had listed the 30 component companies which made up the Dow Jones Industrial Average. In the 13 years since, no fewer than 12 companies have either been replaced or merged into today's Dow components to reflect the changes in the most active sectors of the U.S. economy.

But my objective today is to focus on the performance of this index since the start of the new millennium. The chart highlights the major events and their effect on the index.

Remember 31st December 1999? We had spent the year in anticipation of what was to be, by some accounts, the end of the world! The fear of God was put into us that computer-dependent systems would go bananas unless the two-digit year "00" could be understood as 2000 rather than 1900. Y2K disaster scenarios were only limited by the vivid imagination of those who foresaw a nightmare on a global scale which never happened. The new millennium rolled in and the correct dates rolled over on virtually all computers, with a few irrelevant exceptions.

The new millennium saw the Dow Jones peak at an all-time closing high of 11722.98 on January 14th, **2000**. Six and a half years later, the closest the Dow has been to breaking this all-time high was just 80.33 points short when, on 10th May 2006, it closed at 11642.65.

By mid-February 2000, the Dow had collapsed by more than 10% when the oil price surged to more than $30 a barrel which, at the time, was proving a near insurmountable obstacle for energy-dependent companies. By February 25th, it had closed below 10000, and after briefly resurfacing for a breather, it dived to what was to be the lowest closing price of the year 2000, at 9796.04 on March 7th.

As the money spent from the capital budgets of companies' IT Departments (in preparing for Y2K by upgrading all the programmes and systems to read four-digit dates) ran out, there was little left to sustain the technology-driven growth, and the internet-led tech boom. The Nasdaq composite index sky-dived from its March 10th all-time high, and by Friday, April 14th 2000, it had dropped to 3321, hiving more than one-third off its value just one month and four days earlier. On that day, the tail wagged the dog and the Dow Jones fell a then-record 617 points in one day.

Investors who had borrowed, or bought on margin into the raging bull market, started getting margin calls. As they sold into a collapsing market, the pressure on the Nasdaq index caused it to vortex to a bottom of 2332.78 on December 20. Add to this the six-week indecisive presidential election, which the Supreme Court finally resolved in favour of George W. Bush, and it makes you wonder how the first year of the new millennium saw the Dow fall by only 6.18%, to end in negative territory for the first year since 1994.

"When the Dow sneezes, the rest of the world catches cold"

In **2001**, G. "Dubya" Bush took the oath of office on 20th January. Not even Nostradamus could have predicted that within 8 months the economic heart of America would be ripped out by the infamous terrorist attack of September 11th. The economy had slipped into recession by March, but it might have ended sooner had it not been for the atrocities committed.

On the New York Stock Exchange, which was undamaged, trading was suspended for four days, due to the destruction of the World Trade Centre, and the Lower Manhattan infrastructure. When trading resumed on the September 18th, the Dow collapsed 684.81 points, and by September 24th, it had experienced its worst weekly percentage loss in 61 years, with a 14.3% decline.

Monthly real gross domestic product and sales by manufacturers, wholesalers and retailers reached their lows in September, but the National Bureau of Economic Research (NBER) put the recession's end at mid-November, following the Federal Reserve Board's tenth interest-rate cut of the year on November 7, to 2%. In response, the Dow rose to a post September 11th high of 9591.12. Meanwhile, the war on terror, which had seen the first U.S. and British attacks on Taliban positions in Afghanistan on October 8th, routed the Taliban from Kabul on November 14th. In retrospect, the 7.1% fall in the Dow for 2001 to 10021.50 could have been equally acceptable even at twice that rate.

2002 would prove to be the third consecutive yearly index fall, with an 18.8% decline – its worst performance since 1977. This was the year of the introduction of Euro notes and coins, and Greenspan's reducing the Fed's interest rate to 1.25% - causing investors to flee to the safety of U.S. Treasury bonds. Stock market gloom was intensified by corporate accounting scandals, primarily at Enron and WorldCom. The scandals destroyed the accounting and auditing firm Arthur Andersen, then one of the Big Five. Confidence in listed companies' accounts evaporated and resulted in a loss of public trust in accounting and reporting practices. This was offset later in the year when the Sarbanes-Oxley Act was passed, to strengthen Corporate governance and restore investor confidence. It was sponsored by US Senator Paul Sarbanes and US Representative Michael Oxley.

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Keeping up with the (Dow) Joneses – A Turbulent Start to the Third Millennium

As the effects of the September 11th attacks continued to weigh on the travel industry in 2002, USAir and United filed for bankruptcy, and American Airlines restructured. However, the housing market continued booming as buyers took advantage of falling mortgage rates to trade up to larger homes and investors poured cash into commercial properties.

With the benefit of hindsight, we now know that the Dow Jones Industrial Average hit a five-year closing low of 7286.27 on October 9, 2002 – just days before terrorists bombed a night club on the island of Bali and seized a theatre in Moscow, and a month before the U.S. began ratcheting up the pressure on Saddam Hussein to open Iraq to U.N. weapons inspections.

With hindsight we now know that for the 4th time in history, we had three consecutive years of the Dow in negative territory. The other 3 times were: (i) 1901,1902,1903, (ii) 1929,1930,1931,1932 (iii) 1939, 1940, 1941.

Part II of this article will cover the second three years of the first decade of this millennium.