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Reinventing Star Trek

As I observe the Maltese Ministry of Health battling with the ongoing out-of-stock sage of medicines within the Pharmacy of Your Choice scheme, my neuronal long-term potentiation recalls my childhood experience of Star Trek. I wonder why ...

Essentially, I grew up watching Star Trek. To put it very mildly, the series has influenced the way we think today, even if we do not realise this.

Mobile phones have been invented this way. This has been claimed during an interview by none other than Martin Cooper, who invented the first mobile phone, way back in 1973 (www.youtube.com/watch?v=wN-_VA5HFwM). Another medical advance heralded by the TV series is hyposprays, whereby Dr McCoy, more commonly known as Bones, administered injections which didn’t involve needles. Yet another example is aptly demonstrated by Geordi La Forge, the blind Lieutenant on the Enterprise-D, who was able to see because of a visor, which consisted of a small strip of metal that went across his eyes like a pair of glasses. Scientists today refer to this technology as the bionic eye and although challenging, its application for blind people may be closer to us than one may think. Monash University in Melbourne is one of its champions (www.monash.edu.au/bioniceye/technology.html).

Interestingly, a recent technology which is also reminiscent of the American science fiction series, is the MR-guided focused ultrasound surgery. InSightec, which is headquartered in Israel, is marketing this innovation as ExAblate®. This personalized, non-invasive, real-time treatment works by using a transducer to transmit ultrasound waves. Its applications may include various conditions including uterine fibroids, breast cancer, prostate cancer, liver cancer and pain palliation of bone metastases. It seems to be particularly promising for Parkinson’s disease and neuropathic pain. In fact videographic footage has evidenced patients suffering from essential tremor leaving the room post-treatment with no tremors (www.youtube.com/watch?v=Ze54lQXtUxo&list=TLmVURADr-4PM)

Its advantages include a short recovery time, the fact that no hospitalization is needed and that it is drug-sparing. Furthermore, no incisions are needed and there is a low frequency of adverse events. Nevertheless there are various challenges for each clinical scenario.

One example is the non-uniformity of skulls which needs to be factored in during the treatment of brain tumours.

Innovative applications of this focused ultrasound sonification process include haemorrhagic stroke where it can be used to liquefy clots, and targeted drug delivery, where it can be used to deliver medicines in a reproducible manner through the blood-brain barrier. As reported by Etame et al in The Journal of Neurosurgery in January 2012 (PubMed: 22208896), this targeted drug delivery is achieved by increasing the permeability of the blood-brain barrier. Last April, Nanoscale has also published an article by Zha et al who detailed the adaptation of this technology for image-guided microbubble destruction of cancer cells. This is done by incorporating CuS nanoparticles (PubMed: 23467503).

Hopefully we will hear more of similar technologies soon enough.

Ian C Ellul

A JOKE A DAY KEEPS THE DOCTOR AWAY

Final doctor’s trip

A cardiac surgeon died and at his funeral the coffin was placed in front of a huge heart made of flowers. When the priest finished with the sermon, and after everyone said their good-byes, the heart opened, the coffin rolled inside and the heart closed.

Just then, one of the mourners burst into laughter.

The guy next to him asked: “Why are you laughing?”

“I was thinking about my own funeral” the man replied.

“What’s so funny about that?”

“I’m a gynecologist.”
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COMPREHENSIVE POWER
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EUCREAS® is indicated as triple oral therapy in combination with an SU.

GALVUS® and EUCREAS® are indicated for use in combination with insulin.®

1. Novartis European Ltd. Galvus® Summary of Product Characteristics
2. Novartis European Ltd. Suecrenas® Summary of Product Characteristics

GALVUS® (vildagliptin) tablets
PRECAUTIONS: Each tablet contains 50 mg of vildagliptin. INDICATIONS: For the treatment of type 2 diabetes mellitus in adults. As many as 30% of patients with type 2 diabetes mellitus do not respond to metformin therapy alone. In these patients, a switch to combination therapy with a DPP-4 inhibitor, such as galvus, may be effective. In combination with metformin, galvus has been shown to improve glycemic control. Galvus is not recommended for use in patients with a history of pancreatitis. Galvus is not recommended for use in patients with a history of severe liver disease.

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EUCREAS® (vildagliptin/metformin hydrochloride) film-coated tablets
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Dr. Charles A. Gauci MD FRCA FIPP FRCP RAMC (Retd) is a consultant in Pain Medicine recently retired to Malta, having run the Pain Clinic at Whipps Cross University Hospital, London for over 20 years; prior to that he served in the RAMC, retiring in 1992 in the rank of Lt. Colonel. He was, until recently, visiting Consultant at MDH. He was an expert witness in the UK Courts and has been involved in medico-legal work for over 30 years.

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Dr Pierre Vassallo MD PhD FACA Artz fur Radiologie specialised in radiology at the Institute of Clinical Radiology at the University of Muenster, Germany and the Memorial Sloan-Kettering Cancer Center, New York, US. He is currently Consultant Radiologist and Managing Director at DaVinci Hospital, Malta.

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Reversing the road to malignancy

The aim of cancer chemotherapy is to destroy the maximum number of tumour cells with the minimum number of normal body cells in order to achieve a maximal therapeutic ratio. Nevertheless it is a therapy which is often ineffectual and quite frequently associated with severe complications.

It is therefore with considerable interest that one reads that other methods of therapy, which do not involve cell killing, is surprisingly showing promise in what is one of the most lethal forms of leukaemia, namely acute pro-myelocytic leukaemia (APL), a disease which often has a 100% mortality within weeks.

There is no question about the fact that cancer cells behave in their characteristic aggressive way as a result of changes in the DNA which controls all cell metabolic activity. It is also well established that a DNA change might take several years to become established as clinical cancer, often requiring other ancillary stimulations, genetic or environmental, to activate and promote this irreversible result. In other words, a genetic change in the cell DNA is necessary but not sufficient to produce clinical cancer.

For a long time it was thought that once a genetic change has occurred there is little that the environment can do to reverse the action of this blueprint. However, it is now clear that several factors can modify the activity of genes, to either stimulate or suppress their activity.

At the recent meeting of the American Society of Hematology, considerable evidence was provided that the course of APL could be arrested and reversed by drugs which, while not cytotoxic, can somehow stop the malignant mechanism and set the cell back to its normal developmental pathway.

Current treatment for APL consists of a combination of ATRA (all-trans retinoic acid) and chemotherapy. The new therapy consists of ATRA plus arsenic trioxide (ATO). Dr Francesco Lo-Coco, professor of hematology at the University of Tor Vergata in Rome, one of the authors of the study, is convinced that this modality of treatment shows that this finding upturns the standard dogma and provides evidence that malignant cells can be transformed back into their normal, non-malignant form. In the opinion of the authors, this combination is “really quite impressive”. In effect, Lo-Coco says, “cancer is not an irreversible condition.”

The mode of action of this combination therapy is currently under intensive investigation. A recent article in the top hematology journal, Blood, indicates that ATO inhibits the formation of pro-myelocytic leukemia protein and stabilises cytoplasmic precursor compartments (PubMed: 22692509).

Whether the action of this combination will be found effective in reversing other more common malignancies remains to be seen. It is, however, encouraging to see that a first step has been made in upsetting the standard thinking about treatment of cancer, which raises hope for a more physiological way of controlling it.
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²High lung deposition provides better control of lung function than other inhalers. 

³Peak Inspiratory Flow provides better control of lung function than other inhalers. 

Symbicort® Turbohaler® contains budesonide/fomoterol and is available in two strengths: 100/6 mcg (Symbicort® Turbohaler® 100/6) and 200/12 mcg (Symbicort® Turbohaler® 200/12). Each metered dose contains 200 mcg budesonide/inhalation and 6 mcg formoterol fumarate/dry powder inhalation. Each Symbicort® Turbohaler® contains 120 inhalations. Each patient receives 25% more drug with Turbohaler Turbohaler than with other inhalers. 

Symbicort® Turbohaler® contains budesonide and formoterol fumarate for maintenance treatment of asthma and COPD. Symbicort® Turbohaler® contains 100/6 mcg (Symbicort® Turbohaler® 100/6) and 200/12 mcg (Symbicort® Turbohaler® 200/12). Each metered dose contains 200 mcg budesonide/inhalation and 6 mcg formoterol fumarate/dry powder inhalation. Each Symbicort® Turbohaler® contains 120 inhalations. Each patient receives 25% more drug with Turbohaler Turbohaler than with other inhalers. 

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Labelling and testing of foods designated as suitable for diabetic and low calorie diets

Abstract
The aim of this project was to assess whether consumers, especially those following a diabetic or low calorie diet, would benefit from newly designed food labels denoting glycaemic load and whether these labels would help them make a faster food selection.

Introduction
Over 30,000 patients in Malta have been diagnosed with diabetes, with statistics indicating that there are thousands of other undiagnosed patients who are still not aware that they are suffering from this condition.1 The first line treatment for such patients includes regular exercise and dietary changes, which calls for a moderate consumption of carbohydrates and proteins, whilst increasing the consumption of low sugar-containing fruit, vegetables and fibre, and decreasing the intake of oils and fats.2 The World Health Organization (WHO), whilst advocating dietary changes in diabetes, does not provide guidelines by which patients can be helped to distinguish what food is right for them. Indeed in 19873, the WHO and the FAO (Food and Agriculture Organization of the United Nations), agreed that foods require better labeling to guide diabetic patients, but adjourned the meeting, noting that due to the advancements being made at the time, a decision on the matter should be taken at a later date. This has, to date, never been re-discussed.

This study aimed to increase the patients’ knowledge regarding how foods affect blood glucose levels (BGL) and empower these patients to make optimal decisions about which foods could help maintain their BGL as stable as possible, thus consequently improving treatment outcomes.

Methods
The study focused on the production of new glycaemic load (GL)-based labels, and on the evaluation of their efficacy in imparting the necessary information to people hailing from all educational backgrounds, using pre-validated standardized questionnaires. Face and content validation of the questionnaire was conducted with a pilot group consisting of six pharmacists, a doctor, two diabetic patients and a house-wife. Most of the suggested changes related to the wording of the actual questionnaire.

The questionnaire was compiled by customers visiting four main supermarkets in Naxxar, Sliema, Zabbar and Gudja over a period of one month. The data collected was subsequently evaluated and analysed using gender, education and dietary habits as baselines.

The labels were produced following the guidelines issued by the UK Coronary Prevention Group whose study showed that graphical representations were found to be better interpreted, on the basis of attractiveness and simplicity.4 A traffic light colour combination was chosen to denote danger, alertness and safety using Red, Orange and Green respectively to represent High, Medium and Low GL brackets – ensuring readability by patients, who in most cases were already accustomed to the meaning of these 3 colours (Figure 1). Figure 2 shows how a GL label, developed in this study, would look like.

A questionnaire was formulated in order to establish demographics of respondents, whether or not they were diabetic or were following a low calorie diet (to establish whether the respondents understood the relationship between GL and absorbance of sugars) and to identify whether or not the new labels prepared in this study would help patients make a faster selection of food products at the point of purchase. Before working through the questionnaire with the respondent, a verbal explanation of how GL could help a patient understand the blood sugar level (BSL) and the absorption of sugars in the body was given. These results were analyzed using frequency studies owing to the fact that these were considered to be more pertinent to the types of questions asked.

| Glycemic Load | High | 24 |
| Glycemic Load | Medium | 15 |
| Glycemic Load | Low | 7 |

Figure 1: Glycaemic load label section, developed in this study that can be added to any standard food label

Analysis

<table>
<thead>
<tr>
<th></th>
<th>Per 100g</th>
<th>Per pcs</th>
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</thead>
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<tr>
<td>Energy</td>
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<td>141KJ</td>
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<tr>
<td>Fat of which saturated fatty acids</td>
<td>2.8g</td>
<td>0.2g</td>
</tr>
<tr>
<td>Dietary Fibres</td>
<td>4g</td>
<td>0.3g</td>
</tr>
<tr>
<td>Glycemic Load</td>
<td>MEDIUM</td>
<td>15</td>
</tr>
</tbody>
</table>

Figure 2: A mock-up of how the new GL section, developed in this study, could be integrated into a generic food product label
Results

In total, 102 respondents participated in the study, out of which 65 were female and 37 were male. The average age of the respondents was 31.8 years (ranging between 18 and 80 years).

Figure 3 illustrates the difference in responses between sexes. Sixty-two percent (62%) vs 61% of male and female respondents respectively, stated that they were following a diabetic or low calorie diet. Seventy percent (70%) of female respondents buy products for these diets, compared with 54% of males. Ninety-one percent (91%) vs 92% of females and males respectively, thought that learning what GL represents and what GL a specific product has, would aid them make a faster selection of foods for these diets.

In figure 4, the relationship between educational level and the respondents’ understanding of what GL represents is illustrated. None of the respondents who had a primary level of education understood what GL meant and how this affected BSL. Eighty Percent (80%), 86% and 100% of secondary, post-secondary and tertiary education levels respectively understood what the term GL really meant.

Out of all the respondents, 61% stated that they were following a diabetic or low calorie diet (Figure 5). Ninety-five percent (95%) of these respondents answered that the new labels helped them make a faster selection, while only 5% said that this does not affect the speed of the selection process (Figure 6).

Figure 7 shows that although a higher percentage (14%) of respondents who do not follow a diabetic or low calorie diet were not affected by the new labels, a high percentage (86%) noted that these would enable them to select their food faster.

The overall visual rating of the labels, as well as the ease with which respondents were able to identify the information given by the GL section (new labels) were found to be either good (36%) or very good (64%) (Figure 8)

Discussion

While an equal amount of men (62%) and women (61%) were following a diabetic or low calorie diet, only 54% of males, compared to 70% of females...
interviewed, actually bought products for these diets – suggesting that women are more likely to be the food buyers in the household. Ninety-two percent (92%) of the men vs 85% of the women interviewed stated that they understood the meaning of GL and how this can be used to indicate how the food affects BSLs. Both men and women (92% of men and 91% of women) confirmed that the new labels would help them make a faster selection of food, should these be included on packages.

The findings of this study have shown that respondents coming from a secondary (80%), post-secondary (86%) or tertiary (100%) educational background, understood the relationship between GL and BSLs. Further education campaigns on the GL and BSL explanation should be undertaken so as to make this easily understood by respondents coming from a primary (0%) background.

Sixty-one percent (61%) of the total respondents claimed to be following a diabetic or low calorie diet, which suggests that a high number of Maltese people are actively following these diets – an indication of the high demand for low GL foods in the community. The implication is that there would be an increased awareness among this population cohort of the importance of reading the labels of the foods that they purchase, which could explain why a higher percentage of the participants claimed that the designed labels would help them make a faster food selection. While being a significant conclusion, this should not be taken to mean that the designed labels appeal exclusively to dieters and diabetics, as evidenced by the fact that all respondents, irrespective of their diet or diabetic status rated the labels as good (36%) or very good (64%).

The GL was selected as being the best value to work for the new labels. The other option of the Glycaemic Index (GI) was discarded owing to the fact the latter does not take into consideration the amount of carbohydrates (CHO) per serving; the GL is the GI multiplied by the CHO amount per serving of the food.5-7

Patient education remains a priority, in that the consumption of a large amount of low GI foods should still be avoided. However, empowering patients to distinguish between food types definitely constitutes a step in the right direction. 8

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UPCOMING EVENTS FOR 2013
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1ST OCTOBER | Location: Malta
45th Annual Meeting of the Diabetes in Pregnancy

8TH OCTOBER | Location: Malta
7th Biennial Primary Health Care Department Conference: Optimising the delivery of primary healthcare in Malta

10 – 12TH OCTOBER | Location: Malta
23rd Alzheimer Europe conference: Living well in a dementia-friendly society

29TH OCTOBER – 1ST NOVEMBER | Location: Melbourne
The 8th International Conference on Legionella

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Researchers’ Night - Science in the City, Malta’s science and art festival, is back again on the 27th September in Valletta from 6pm onwards. Science will be exposed through art and entertainment including street art installations, graffiti art exhibitions, music concerts, children’s shows, live experiments, talks, tech areas, and much more … a memorable night which is fun, interactive and free.

As part of the pan-European event known as Researchers’ Night, Science in the City is organising over 25 events for all the family. Live experiments will be run in different areas around Valletta and a kids area will keep children hooked on science for hours. The public will be able to do some of these themselves, highlighting the fun and spread of science in our everyday life.

Families, young people, and adults can learn about insects surrounded by a 10-foot tall butterfly. Or they can make their own cup of coffee using pedal power, or better still, see the latest technology in making things work around a house without lifting a finger. A tech area will see robots and art installations coming to life.

The activities will occupy Valletta, running from the Upper Barrakka and St James Cavalier, down both Merchant’s Street and Republic Street till St George’s Square (Palace Square) and the Old Market area.

The festival opens the doors of Valletta for everyone to meet researchers from the University of Malta as well as artists, and participate in the interactive demonstrations, discussions, workshops and children’s activities.

Researchers will be present at different venues to talk about the science behind the activities. A special event will be held at the King’s Own band club were anyone can pop over for a drink and chat with researchers about the science of food, our universe, or some unique facts about Maltese blood.

A day before the big night, the Science in the House event will bring together researchers and politicians. Several researchers are presenting broad research themes to MPs, ranging from medical genetics to material science. Engaging politicians helps raise awareness about the important of research in Malta and why it needs more support. This Science in the House event will also be held as a public event during Notte Bianca, Saturday, October 5.

The event is coordinated by The University of Malta’s Research, Innovation and Development Trust, in partnership with the Malta Chamber of Scientists. The University’s Research, Innovation and Development Trust (RIDT; www.ridt.org.mt) is supporting the 2nd edition of the Researchers’ Night - Science in City festival since it manifests the best in research and researchers in their efforts to advance knowledge and benefit society in Malta and elsewhere. The event will highlight the appeal of pursuing a career in research. Investment in scientific research is a guarantee of the successful future of our country. The RIDT actively seeks funds and support from private and corporate bodies, private individuals, and University alumni to expand the University’s research studies. The Malta Chamber of Scientists (www.mcs.org.mt) is one of the principal members of the organizing consortium. The Chamber is a professional organisation of science professionals, academics, teachers and students from broad areas of science and the social and economic sectors. Apart from the Science in the House event, it will also run a special Malta Café Scientifique at the La Vallette band club with the title ‘Protons, Proteins and Particle Accelerators.’

The Researchers’ Night - Science in the City festival is also supported by the EU FP7 Programme and the Malta Arts Fund. The organizing committee also includes the Valletta Local Council, MEUSAC, Malta Council for Science and Technology, Malta Council for Culture and the Arts, The Public Broadcasting Service, Where’s Everybody, Valletta 2018 Foundation, Notte Bianca, iCreatemotion, Microsoft and St James Cavalier.

The Science in the City website www.scienceinthecity.org.mt is updated with a full program. The festival may also be followed on Facebook: www.facebook.com/ScienceInTheCityMalta
Chronic pain is not just a symptom: it is a disease in its own right and one which demands treatment. Chronic pain is bad enough, but it can also trigger psychological problems, including depression and anxiety, producing a most unpleasant state of affairs for both the sufferer and his/her family and friends. On the other hand, chronic pain can also appear as a result of mental illness such as depression.

Pain is not just an unpleasant sensation; it is also an emotional experience (suffering), which often generates altered behaviour. Thus it is not just the chronic pain that needs to be dealt with, but also all the other unpleasant effects that it generates.

Chronic pain and the many physical and psychosocial changes and complications associated with it constitute a major healthcare problem. It also constitutes, at least in the UK, a major medico-legal problem, since British Courts award claimants compensation for pain resulting from personal injuries.

Pain, especially chronic pain, is very much a personal experience. The same condition may cause different types of pain in different individuals – and what’s more, what one person considers to be severe pain may be quite moderate to another. How someone feels pain is influenced by psychological, emotional and cultural factors – even by their own personality.

It is virtually impossible to prove the presence of pain or to measure it objectively. Hence the problem which pain creates in medico-legal cases.

Measuring pain

There is no direct, objective way of measuring pain; indeed one of the main problems in medico-legal work is that, to a large extent, you are relying on what the claimant tells you.

Some individuals may, intentionally or otherwise, mislead the expert. One, therefore, needs to be very attentive when questioning claimants; one also needs to make a detailed examination of previous clinical records.

The Visual Analogue Scale (VAS) is a very simple way of quantifying or measuring pain; however, it is very limited, for it only measures one dimension, i.e. pain, without taking anything else, such as the emotional trauma inflicted by the pain, into account.

Many pain clinics use a variety of questionnaires in their bid to log the whole of the unpleasant experience i.e. pain, more accurately.

Quite apart from the difficulty of putting a numerical value, pain does not always appear at the spot where the problem occurs i.e. referred pain.
Types of Pain

There are three categories of pain, namely:

- Nociceptive pain;
- Neuropathic pain;
- Non-organic (or psychological) pain.

Nociceptive pain is essentially pain caused by damage to body tissues in the presence of a totally normal nervous system. There can be damage to the body framework – somatic – or it can be due to damage to the body organs – visceral.

Neuropathic pain (‘Nerve Pain’) is pain “which arises as a direct consequence of a lesion or disease affecting the somatosensory system.” A Neuropathic pain refers to pain which is due more to a sensitisation of the nervous system. The damaged nerve(s) and sometimes even nearby undamaged nerves become oversensitive and can then be ‘set off’ by various stimuli, sometimes as innocuous as light touch.

Continual bombardment of the spinal cord by repeated barrages of nerve impulses coming from these affected nerves can make the spinal cord very sensitive so that it starts to magnify the intensity of the pain impulses it transmits to the brain (windup); as seen, it can also distort innocuous sensations, converting them into pain.

It is important to remember that even if the damage, which triggered off the nerve problem in the first place has healed, one of the sequelae can be that the nerve(s) remains in this hyper excitable state. In neuropathic pain, therefore, the pain is being caused by the damaged nerve and not by the original injury.

According to Dr Alan Basbaum (a leading American pain specialist), “The nervous system after injury, with respect to the processing of pain, is a very different nervous system to that which existed before it was injured.”

Non-organic (psychological) pain happens due to alterations in the normal function of the nervous system as a result of non-organic (psychological) causes. On the whole, most people can handle physical pain more than they can handle psychological pain. It is this latter kind of pain which often causes the most controversy in medico-legal cases.

An individual under severe emotional pressure, for whatever reason, may readily convert his/her stress into pain and project this pain to a specific part of the body e.g. the back, by a process called somatisation. A person who converts ‘emotional pain’ into physical pain is called a somatizer. In these cases, the patient may feel severe pain in some part of his/her body without any identifiable cause in that part. A patient already suffering from chronic physical pain in a part of his/her body e.g. the back, can more easily become a somatizer, as the pre-existing physically painful locus presents a ready focus for somatisation. Thus, a pre-existing low back pain may get worse if the patient finds him/her self under stress.

A patient may have chronic pain in one area of the body due to an organic cause and this can then trigger non-organic pains at other sites. Thus a patient may start off with a back problem and after some time start complaining of pain in many other areas of the body – so called global pain or total body pain. Fibromyalgia is a condition classically associated with total body pain.

In some cases, there may be no physical cure available for a painful problem and in such cases, the patient must be taught how to live with and cope with his/her pain.

This is done by means of specialised multidisciplinary ‘Pain Management Programmes.’

A Pain Management Programme is a psychologically-based rehabilitative programme for people with chronic pain which has remained unresolved by currently available methods of therapy. Its main aim is to reduce the disability and distress caused by chronic pain by teaching sufferers physical, psychological and practical techniques to improve their quality of life.

A Pain Management Programme differs from standard pain clinic therapy in that pain relief is not the primary goal, thus the patient is taught that his/her pain is never going to go away; having accepted this basic premise, he/she is then taught how best to cope with the pain.

A Pain Management Programme tackles various factors, namely, exercise/physical fitness, activity planning, cognitive therapy, reduction of medication and relaxation.

I now wish to highlight a few topics of specific interest to medico-legal practitioners:

1. Chronic pain and psychological factors;
2. MRI scan changes in spinal pain;
3. Waddell’s signs in low back pain.

1. Chronic pain and psychological factors

In medico-legal work, we often come across the interplay between chronic pain and psychological factors. Thus, it is not at all uncommon for a claimant to suffer a relatively minor injury and yet to complain of persistent pain for an inordinately long period of time. A number of whiplash cases fall into this category.

The defendant's legal team will inevitably maintain that the claimant is 'making it all up' in order to embellish his/her case, i.e. that he/she is malingering; in a number of cases, the defendant may very well be proven right by independent surveillance evidence. However things are not always as simple or as clear cut as that.

Thus,

1. The claimant may have suffered a major trauma and have an undisputed, non-controversial reason for his/her chronic pain. All the experts in the case are in agreement; end of problem!
2. The claimant may have suffered trauma, which generated a genuine physical cause for continuing pain; the physical cause persists, but the pain is totally out of proportion to the said physical cause.
3. The claimant may have suffered trauma which generated a genuine physical cause which produced 'physical pain'; the physical component, although still present to some extent, has decreased substantially, but the level of pain it produces is out of proportion to that physical component. In this case, the psychological component, although not creating the pain, is maintaining it.
4. The claimant may have suffered trauma which generated a genuine physical cause which, however, has produced pain for an inordinately long period of time, long after the said physical cause has disappeared; thus, in the absence of a continuing physical...
cause, psychological factors are now both creating and maintaining this pain.

So, we now need to look more closely at these 'psychological problems.' In some cases, there may undoubtedly be an element of deliberate profit-seeking exaggeration, but in others, the psychological factors may be quite genuine.

The expert has to look closely at the pre-accident state of the claimant; for example, does he/she have a long track-record of repeated visits to the GP with a host of (often) trivial complaints? Is there a history of psychological problems e.g. self-harm, marital strife, substance abuse? Has the claimant seen a psychiatrist or psychologist before? Has he/she received counselling for whatever cause? Such individuals are regarded as having vulnerable personalities and are prone to blowing things out of all proportion, a process called catastrophization.

These individuals are also more likely to convert psychological problems into physical problems; this process, as discussed, is called somatisation.

It is also possible that the claimant develops a Pain Disorder. There is some confusion on what constitutes a 'Chronic Pain Syndrome' and a 'Pain Disorder.'

Chronic Pain Syndrome
Chronic pain is pain that is unlikely to resolve, or pain that lasts longer than the usual healing time; pain is generally accepted as 'chronic' if it has been present for at least three months.

Although there are no generally accepted criteria for diagnosing a chronic pain syndrome, Rice et al specify the criteria which are required for the diagnosis of a chronic pain syndrome. These include the following:
- Persistent pain of longer than two to four weeks’ duration;
- Pain behaviours, both verbal and non-verbal;
- Vague, inconsistent and inaccurate reporting of pain, indicating non-specific pain;
- Substance abuse and/or dependence;
- Depression;
- Muscular dysfunction and de-conditioning, resulting in secondary pain of musculo-skeletal origin;
- Withdrawal from work, recreational and family endeavors;
- Dependence on physicians, spouses and families.

Thus, co-existing physical or mental disease can be modified or, indeed, amplified by the presence of chronic pain, further complicating the picture. In addition, perceptions of pain may be altered by anticipation, age, medications, environment and physical status. Culture and belief also alter the way chronic pain co-morbidities manifest themselves.

Pain Disorder
In some cases, the psychological component of the patient’s problem becomes very prominent and sometimes overwhelming. Psychiatrists then speak of a “Pain Disorder”. A pain disorder is a response with definite psychological features and possibly, also some physical features to ongoing pain. It can only be formally diagnosed by a psychiatrist, with specific reference (at least in the UK) to the Diagnostic and Statistical Manual of Mental Disorders (the ‘DSM’).

The perception of pain, for a variety of reasons, becomes exaggerated in the patient’s mind; he/she becomes increasingly depressed and despondent. This further worsens the perception of the pain so that a vicious cycle is set up. If one component of this vicious cycle - either physical or psychological - can be broken, then the other component tends to improve pari passu.

Two things should be pointed out with reference to a pain disorder. Firstly, it is generally (although not universally), accepted that a pain disorder is a genuine medical condition. It is as much psychological (if not more so) in origin as physical but it is, nonetheless, a specific medical condition. Secondly, it is a condition distinct from malingering, in that the patient with a pain disorder really does perceive the pain in his/her own mind and consequently suffers the disability. The patient behaves in just the same way whether he/she is being observed or not.

Of course, it can be sometimes very difficult to decide between a patient who is a genuine victim of a pain disorder and someone who is malingering. This is, ultimately, a matter for the court to decide. We might in fact, be witnessing a Conversion Disorder or a Factitious Disorder.

A Conversion Disorder implies somatization, i.e. the patient converting his/her psychological issues into pain. During my Army days, I saw a few cases of this when dealing with Far Eastern Prisoners of War (FEPOW), who suffered unimaginable horrors at the hands of their Japanese captors; guilt from survival was a powerful somatizer. One individual, who, I remember vividly, suffered chronic pain as a form of atonement to make up for surviving; previously, his mate, was made to kneel next to him and was decapitated with a sword. But for the fortunes of war, that victim might well have been him. He felt intense guilt at his survival and somatized his guilt into total body pain. Such somatized pain is based upon unconscious motives and emotional conflicts.

In some cases the cause of the pain is obvious and in others it is not so obvious; in other words, there is a split in the psychological processes between what is known and what is unknown, i.e. between the symptoms and the conflict.

Perceptions of pain may be altered by anticipation, age, medications, environment and physical status.
that has caused it. It is an Extreme Behavioural Response, by which the patient expresses any stress, tension or unhappiness in life by focusing on physical symptoms.

In some cases, somatization can become an illness in itself; we then have a Somatization Disorder. A Somatization Disorder, previously called Briquet Syndrome, or St Louis Hysteria is a psychosomatic disorder where mental turbulence expresses itself in physical symptoms, rather than psychiatric complaints; this leads to abnormal illness behaviour and a pattern of multiple, unexplained, symptoms, including pain.

A Factitious Disorder implies that the patient is feigning the symptoms or simulating an illness. This behavior is at a conscious level and is often motivated by psychological conflict.

An individual might be motivated to perpetrate factitious disorders in order to gain a variety of benefits including attention and sympathy that are unobtainable in any other way. All the above is in contrast to malingering, in which the patient deliberately and consciously feigns his/her symptoms in order to obtain an obvious material gain, which may include compensation following an accident.

Factitious disorder and malingering cannot be diagnosed in the same patient, and the diagnosis of factitious disorder depends on the absence of any other psychiatric disorder. Sometimes the medical court expert is very surprised when an apparent chronic pain sufferer is shown, in covert surveillance evidence, to be doing considerably more than he/she claims to be capable of. Only the court can decide if a Claimant is actually malingering.

2. MRI scan changes

A common bone of contention between medical experts is often the presence of MRI scan changes in cases of neck and back pain. In simple terms, the defendant’s legal team will maintain that “… this claimant has pre-existing MRI scan spinal changes, he/she now has pain in that area, ergo his/her pain is not really due to the index accident, it would have happened anyway.”

A simple extrapolation of MRI spinal scan changes to pain is rather dangerous! It is by no means as straight-forward as it would, at first, appear to be. A large proportion of totally asymptomatic patients can have significant changes in their MRI scans, including prolapsed intervertebral discs, so one cannot simply ascribe post-trauma pain to these ‘pre-existing’ changes. This being said, degenerative arthritis, as evinced by MRI scan changes, could eventually cause the patient some trouble.

The sooner after the index accident the MRI scan is carried out, the better; an early scan would be good evidence of pre-existing degenerative change. One could argue that, in the absence of the index accident, the claimant would, eventually, still have had some symptoms in the spine; thus, in these cases, one could opine that the index accident accelerated the onset of the pain. Factors to bear in mind when considering acceleration include any pre-existing injuries, the nature of accident, the extent of MRI scan degenerative changes (mild to severe), and whether the claimant is a smoker, together with his/her life-style.

Another thing to bear in mind is that as an individual grows older and degenerative processes appear and progress, due to the slow process involved, the individual may adapt and cope and thus experience minimal or no pain. A traumatic event, however, upsets the applecart and can then precipitate severe pain, which would otherwise, perhaps not have appeared or become a problem.

3. Waddell’s signs in low back pain

Much is made of Waddell’s signs in cases of low back pain by defendants’ medical experts, in an effort to destroy a claimant’s credibility. Waddell et al described five categories of signs, namely, tenderness tests, simulation tests, distraction tests, regional disturbances and overreaction. Although Waddell’s signs can detect a non-organic component to pain, they do not, per se, exclude an organic cause.

Clinically-significant Waddell scores are considered indicative only of symptom magnification or pain behavior but they are not considered a de facto indicator of deception for the purpose of financial gain. In fact, in a 2004 review, Fishbain et al concluded that “there was little evidence for the claims of an association between Waddell signs and secondary gain and malingering. The preponderance of the evidence points to the opposite: no association.”

Conclusion

In this day and age, no one should be told to ‘go and live with their pain’ until and unless everything possible has been done to reduce the level of their pain.

The pain specialist is an expert in understanding and managing pain, and all the emotional baggage that pain brings with it. A number of chronic pain consultants in the UK are involved in medico-legal work and compile reports on receiving solicitors’ instructions, on behalf of both claimants and defendants, since UK Courts award compensation for pain arising from personal injuries; the situation in Maltese Courts, is, I believe, totally different.

In my opinion, the time has come for our legal colleagues to look at this. Compensation following a personal injury should not just be awarded for physical disability but also for genuine pain.

References
For one so young, Robert Cachia is a highly dynamic person. Entering his fifth year as a medical student at the University of Malta, he is intensely involved in the Malta Medical Students’ Association (MMSA) and has held a position in the executive board twice, once as the Medical Education Officer and currently as the President of the association.

“One of my responsibilities as the Medical Education Officer was to create opportunities for medical students in order to fill in any gaps existing within the medical curriculum. One such opportunity was a suturing workshop which attracted a good number of students with great enthusiasm.”

Robert recently turned an idea into a tangible reality when he thought of creating a pocket-size medical translator – The MMSA Medical Language Translator | Traduttur tal-Lingwagg Mediku. The publication, issued last April by the MMSA is a 1000+ word book that translates medical terms from Maltese to English and vice versa. Why was it created?

“As a clinical student I started experiencing situations where doctors and patients were having communication problems due to a language barrier. I personally speak Maltese at home but many Maltese students at University are English-speaking and have difficulty keeping up a conversation in proper Maltese. Moreover we now have many foreign students who come to Malta and have to deal with the Maltese/English dual terminology situation. Difficulties arise when speaking to Maltese people who do not understand or speak English or use old Maltese terms and phrases, especially the elderly who make up a great majority of the hospital population. For instance, what would you call a ‘leak’ in Maltese? Or how would you correctly translate the
word into English? Then again, how do you differentiate between ‘minifes’ and ‘minħar’? In fact you don’t, if you know that they both refer to ‘nostril’.

Together with fellow students, he started working spontaneously on the project by forming a quick list of basic words which turn up to be difficult to translate in everyday medical practice. The quick list started from around 100 words and quickly expanded as he researched a contemporary Maltese dictionary in tandem with a contemporary English dictionary. The end result was a total of over one thousand translated words. Each translation is presented in two ways where possible, in order to facilitate communication in different scenarios i.e. it provides layman’s terms when communicating with patients and also provides scientific terms when writing scientific articles and journals.

During the process of this dictionary’s creation, Robert found invaluable help from Professor Manwel Mifsud, Dr Michael Spagnol and Mr Josef Trapani from the Department of Maltese of the University of Malta. “We had plenty of support from the Department of Maltese with great enthusiasm for the finished product which will also be of assistance to Maltese language students, translators and interpreters.” Yes of course, the Medical Language Translator promises to be handy mostly to doctors (including foreign trainees), pharmacists, as well as students of these professions and other healthcare professionals, who sometimes have to struggle for that one unique word which makes things that much clearer especially for patients.

Robert is now awaiting the coming academic year to further promote this translator book. He explains how he has experienced varied situations where medical translation is vital. This has been especially so in his travels during which he attended various student exchanges experienced in Poland, Netherlands and Austria as well as several international conferences experienced in Denmark, India, Ghana and Chile. “I attend these International Federation of Medical Students’ Associations (IFMSA) conferences with great enthusiasm because I learn so much. During the most recent one in Chile there were 118 member organisations from 110 different countries gathering a total of some 1000 delegates. It is obvious that language differences exist in such a diverse accumulation of people; however finding strident language differences on such a tiny island as Malta is thoroughly fascinating. Discovering so many Maltese words of which I had never known the existence of was also a learning experience for me.”

Each translation is presented in two ways where possible, in order to facilitate communication in different scenarios.
Rheumatoid arthritis (RA) and spondyloarthropathy are two groups of inflammatory joint disease. Detection of early inflammatory joint disease is not possible with clinical examination or plain radiography, which have been the main diagnostic methods in the past. Changes detected on plain radiography are those of chronic damage caused by these conditions rather than acute inflammation, which results in delay in diagnosis and often suboptimal outcomes in these patients.

RA is the most common inflammatory arthritis, affecting approximately 1% of the world's population. In 25% of cases, non-articular soft tissues are also involved in the inflammatory process. RA results from inflammation of the synovial membrane (synovitis), with joints becoming swollen, tender and warm and stiff. Most commonly involved are the small joints of the hands, feet and cervical spine, but larger joints like the shoulder and knee may also be affected. Multiple joint involvement (polyarthritis) is common and is typically symmetrical in distribution although not in early disease. Over the last two decades, significant improvement in its prognosis has been achieved owing to new strategies for disease management, the emergence of new biologic therapies (including tumor necrosis factor–blocking agents such as rituximab, abatacept, and tocilizumab) and better utilization of the conventional disease-modifying antirheumatic drugs. Furthermore, the generalization of the American College of Rheumatology (ACR) improvement criteria and European League Against Rheumatism response criteria have proved useful for monitoring the disease course in daily clinical practice.

In contrast, spondyloarthropathy comprises a group of chronic inflammatory rheumatic diseases, including ankylosing spondylitis, reactive arthritis (Reiter syndrome), arthritis or spondylitis associated with inflammatory bowel disease, and psoriatic arthritis, as well as undifferentiated spondyloarthritis. These afflictions predominantly affect the axial skeleton, causing pain and stiffness; are seronegative for rheumatoid factor; and are often associated with the presence of human lymphocyte antigen (HLA)–B27. They are largely differentiated on the basis of clinical information and the distribution of radiographic abnormalities. Spondylarthropathy tends to have an asymmetric distribution when multiple joints are affected.

MR imaging has demonstrated greater sensitivity for the detection
of synovitis and erosions than either clinical examination or conventional radiography and can help establish an early diagnosis of RA and spondyloarthropathy. It also allows the detection of bone marrow oedema, which is thought to be a precursor for the development of erosions in early RA and spondyloarthropathy as well as a marker of active inflammation. In addition, MR imaging can help differentiate RA from some clinical subsets of peripheral spondyloarthropathies by allowing identification of inflammation at the insertions of ligaments and tendons (enthesitis).

Magnetic resonance (MR) imaging has become the most recent innovation and the important change with respect to the previously established classification criteria. MR imaging can serve as a biomarker of disease activity, allows monitoring, and can provide guidance for the treatment of affected patients, and has become even more central to the care of these patients. Familiarity with the anatomy, anatomic variants, and physiologic joint changes is important for correctly interpreting findings and avoiding misdiagnosis.

The term early RA is not defined precisely in the literature. Most authors use the term to describe only disease duration of less than 1 year from the first episode of clinically detectable joint inflammation, although the duration of early RA varies widely between publications (up to 2–3 years in some series). Erosions, periartricular osteopenia, and cartilage loss are all known to occur within 2 years of the onset of RA in the absence of effective therapy. Radiography is not helpful for establishing an early diagnosis of RA, since fewer than 20–25% of patients initially present with erosions. Up to 30% of patients test negative for serum rheumatoid factor, and other pathognomonic features such as rheumatoid nodules usually appear late in the disease process. In addition, RA may start in atypical fashion. It can have a very sudden onset with marked systemic features such as fatigue, fever, and weight loss, or can manifest as polymyalgia rheumatica syndrome (pain and morning stiffness in the hip and shoulder girdles), oligo- or even mono-arthritis, or bilateral carpal tunnel syndrome. The extent of irreversible joint damage and disability will depend primarily on how much time has elapsed before satisfactory treatment is achieved. The effectiveness of management strategies designed to disrupt the development of RA and prevent the long-term effects of this disease depends largely on early initiation of treatment.

When imaging for RA, the hands are the most likely to be involved and usually symmetrically. However it is best to image more painful hand since this is likely to produce more florid findings. Imaging should include coronal and axial T1-weighted, STIR or fat-saturated T2-weighted images and pre- and post IV contrast (Gadolinium DTPA) Fat-Saturated T1-weighted images using a high resolution flexible coil and covering all the wrist joints as well as the MCP and PIP joints since this is the most common pattern of distribution in RA.

Synovitis is the earliest abnormality to appear in RA. Normal synovial tissue that lines joint cavities, bursae, and tendinous sheaths is usually too thin to be visible on MR images. MR imaging signs of synovitis include synovial thickening, increased water content, contrast enhancement, or a combination thereof (Fig 1). Contrast enhanced T1-w MR images allow distinction between synovial hypertrophy and joint effusion. Fibrotic pannus, which is usually present in end-stage rheumatoid arthritis, may show poor or limited enhancement after the intravenous administration of gadolinium-based contrast material.  

(to be continued)
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Throughout its 60 years of existence, the Malta Medical Students’ Association (MMSA) has always been driven by great visionaries who aimed to develop the MMSA into what it is today. Hard-working Executive Boards and past dedicated members have given their precious time to the association in order to help build it into one of the strongest student organisations on campus.

Last year, the MMSA initiated a pilot project to bring together all its esteemed alumni into one database. It would be a privilege for us if you could form part of this database. If interested please send an email on alumni@mmsa.org.mt so that we can add you to our database and keep you up-to-date with the progress of the association and the variety of events we organise under the different standing committees.

Medical language translator

Traduttur tal-lingwaġġ mediku

The Medical Language Translator is a book which has a collection of over 1000 words and phrases used in the health care setting on a daily basis, translated from Maltese to English and vice versa. The aim of this book is to serve as an aid for all health care professionals in order to improve their level of communication with the patient, which in turn results in a higher quality of care. The publication has also been proofread by members of the UoM Department of Maltese so as to ensure that it is of a high calibre.

If you would like more information or are interested in acquiring a copy please do not hesitate to contact us on medicaltranslator@mmsa.org.mt.

The Malta Pharmaceutical Students’ Association

The Malta Pharmaceutical Students’ Association (MPSA) has been running since 1966 but was officially recognised by the senate in 1985. It is a students’ association working in collaboration with the Department of Pharmacy within the Faculty of Medicine and Surgery. MPSA represents students both locally and on an international level and eligible students participate in various events being organised by MPSA itself such as the annual live-in and symposium gala dinner. We are also members of the European Pharmaceutical Student Association (EPSA) and the International Pharmaceutical Student Federation (IPSF) which work on an international level by organising student assemblies. The next event is EPSA’s 10th Autumn assembly being held in Valencia, Spain to which a good number of students have already decided to participate.

We would like to officially introduce our Health Campaigns Team which is responsible for educating the general public on ways how to improve their quality of life through exercise, diet and other lifestyle modifications. Different modes of communication will be used to ensure that these awareness campaigns are easily understood and followed by the public at large. We have also set up a page in Facebook, where snippets of health-related information are shared with the public on a weekly basis. This can be easily accessed on www.facebook.com/MpsaHealthCampaigns

We currently have a number of events coming up including the World Pharmacists Day which will be celebrated on 25 September. This is being held in collaboration with the Department of Pharmacy, the Malta Pharmaceutical Association and Actavis. A public outreach spread over 23-27 September will be highlighting the pharmacist's important contribution towards the safe use of medicines. The theme for this year’s World Pharmacists Day as identified by the International Pharmaceutical Federation (FIP) is ‘Pharmacists - Simplifying your medicines use, no matter how complex’. Another activity which most students would be looking forward to is Freshers’ Week on Campus. MPSA meets the new students and introduces them to the beginning of a new chapter in their lives. For the older students, this marks the start of a new academic year, a great excuse to call for a small party for all to get to know each other, mingle and catch up!
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