Editor’s Choice

This quarter *British Medical Bulletin* has another wide variety of reviews on topics that are new or of especial relevance to modern medical practice.

The first review, which is very topical, is on ‘Psychological Interventions Following Terrorist Attacks’ (Page 7) by Mansdorf from Hadera, Israel.

He makes the point that psychological reactions to terror attacks have been documented as ranging from transient behavioural symptoms to more serious post-traumatic stress. A review of representative studies is presented, with a critical analysis of the salient points of the various psychological intervention strategies for terrorist attacks. Most interventions focus either on a model based on critical incident stress management (CISM, which includes ‘debriefing’) or on fostering personal coping and psychological ‘resilience’. Common aspects of both general approaches include multifaceted models that foster social support and include a preparatory phase; an intervention phase of ‘psychological first aid’ and a follow up phase of referral for more severe cases.

The debriefing aspect of CISM remains the most disputed aspect of treatment, for the focus on intrusively revisiting the trauma appears to have questionable value at best. While the preponderance of the data seems to show that conventional ‘debriefing’ is not recommended, it appears that when the debriefing mechanism is refined, so that intrusive emotional rehashing of the traumatic event is eliminated, the resulting interventions resemble resilience based approaches. Further refining of the mechanisms of intervention in multi-stage intervention is needed.

There follows a review on ‘A Pain Free Death’ (Page 23) by Hicks and Rees from the Leeds Teaching Hospitals Trust.

They state that the time around a patient’s death is often filled with sadness, but good medical and nursing care can provide comfort to patients and their carers at this critical time. For many, a pain-free death is a priority although there are other aspects to providing good care at the end of life. Honest, open discussion with patients and carers about their wishes is an essential prerequisite to individualized care. They make the point that pain management must be tailored to the individual, with due regard to the route of analgesic administration in those unable to swallow, and consideration to the other circumstances surrounding a persons care. All staff caring for dying patients should address pain as a priority in managing end-of-life care, to promote the best possible death for patients and prevent undue distress for carers and staff.
The review approaches patient care at the end of life within the current UK legislation, outlining what can be done to promote a pain-free death. Debate continues about the role of euthanasia within end-of-life care and the use of analgesics and sedatives in pain management in terminal care. There is a range of tools available to help staff to care for dying patients, such as the Liverpool Care Pathway for the Dying (LCP). It is most effective when introduced as part of a wider system of staff education in relation to terminal care. Research priorities include whether the use of tools such as the LCP improve the care that patients receive, and the development of routine outcome measures including validated reports from patients and proxies.

The next review is on ‘Social Cognition in Schizophrenia: A Review of Face Processing’ (Page 43) by Marwick and Hall from the University of Edinburgh.

They show that people with schizophrenia have difficulties in interpreting social information. Much social information is gathered from faces, and face processing represents a well-characterized model to study the basis of social deficits in schizophrenia. Individuals with schizophrenia have impairments in recognizing basic emotions and making social judgements from facial stimuli.

The neural basis of these abnormalities is still being determined. However, initial evidence implicates dysfunction of frontal and temporal lobe brain regions. Hyper-activation of the amygdala, a brain region involved in fear related to facial stimuli, may be an important underlying neural abnormality. The present review highlights the difficulties that people with schizophrenia have in interpreting social cues. Research is required both to understand more about the basis of social deficits in schizophrenia and their potential remediation.

The following review is on ‘HPV vaccines – are they the answer?’ (Page 59) by Stanley from the University of Cambridge.

She states that the burden of Human Papillomavirus (HPV)-associated ano-genital disease is significant but the ability to generate HPV virus like particles (VLPs) by the synthesis and self-assembly in vitro of the major virus coat protein L1 has transformed the prospects for preventing benign and malignant ano-genital disease caused by the common genital HPV types. Two HPV L1 vaccines have been developed: a quadrivalent HPV6/11/16/18 and a bivalent HPV 16/18 product. Both vaccines are very immunogenic and well tolerated. They have been shown in the various randomized controlled trials to be very effective at preventing infection and pre-malignant disease related to the vaccine HPV genotypes in women who were DNA negative and sero negative for the vaccine HPV types at base line.

The protection against disease generated by the vaccines persists for at least 5 years. HPV vaccines containing HPV 6/11 will reduce the
incidence of genital warts by 80–90% in the medium term. The vaccines will reduce, but not eliminate, the risk of cervical cancer as at present they target only two of the oncogenic genital types. Cervical cancer screening programmes will remain as important secondary interventions for cervical cancer even in vaccinated populations. The primary target group for cost-effective immunization with HPV vaccines is peri-pubertal females. There may be benefit in vaccinating other groups (men, sexually active women of all ages) but the cost-effectiveness of these interventions will need to be evaluated. In societies in which organized screening programmes are not available, HPV vaccines are probably the most realistic intervention against HPV-associated disease. Second generation vaccines that offer protection against additional types are thermostable and delivered by non-injection methods are an important area of investigation.

Following this there is a review on ‘Treatment of Atrial Fibrillation’ (Page 75) by Bajpai, Savelieva and Camm from St Georges, London. They make the point that atrial fibrillation (AF) is the most common, sustained rhythm disturbance. The prevalence of AF is increasing as people live longer. Common conditions such as hypertension and ischaemic heart disease play an important role in the development of AF. The presence of AF is associated with increased morbidity and mortality from stroke and heart failure, particularly in patients with structural heart disease. It is well recognized that both rate control and rhythm control are important strategies for the management of AF, but each approach should be chosen according to individual patient circumstances. The majority of elderly, relatively asymptomatic patients will benefit from ventricular rate control. Embolic stroke remains a major complication of AF. Anticoagulation with warfarin remains under-prescribed, especially in the elderly due to the presumed risk of bleeding. The technique of catheter ablation continues to improve and is generally successful in younger patients with relatively normal hearts.

There are clinically relevant differences among published schemes designed to stratify stroke risk in patients with AF. The CHADS2 score is currently the simplest system, but could significantly underestimate this risk, particularly in those who fall in the ‘intermediate’ risk category. Novel antiarrhythmic agents, including atrial-specific agents, with improved efficacy and safety profiles, are currently under development. However, there is, at present, insufficient evidence to expand the use of these agents to a wider patient population. We need to test whether strategies of primary and secondary prevention with treatment of underlying heart disease and modification of risk factors have a larger effect than specific interventions in preventing the burden of AF in the general population.
The next review is on ‘Host–bacteria interaction in inflammatory bowel disease’ (Page 95) by Knight, Campbell and Rhodes from the University of Liverpool.

They state that inflammatory bowel disease (IBD) results from complex interactions between: host genome, immune system, mucosa, bacteria and environment. They review the PubMed database, using search terms ‘bacteria and inflammatory bowel disease’ and ‘genetics and inflammatory bowel disease’. They show that IBD results from interaction between the microbiota of the gut and the immune system. Key gene defects associated with IBD are involved in bacterial recognition and processing. The environment at least modifies and may determine pathogenesis.

It has been disputed whether the primary defect in IBD is immunological or bacterial, and which bacteria are key. ‘M cells’, the specialized epithelial cells that overlie Peyer’s patches, are a major interface between gut bacteria and the immune system. Improved understanding is needed of the bacteria involved in IBD pathogenesis, their genotypes and phenotypes, their portal of entry and their mechanism for escaping attack from the immune system. Bacterial ligands involved in bacteria-epithelial adhesion are emerging, and molecular techniques are rapidly increasing our knowledge of the human intestinal microbiota.

The next review looks at the ‘The genetic basis for type 1 diabetes’ (Page 115) by Mehers and Gillespie from the University of Bristol in the UK.

They make the point that type 1 diabetes (T1D) is caused by autoimmune destruction of insulin-producing beta cells and is increasing in incidence worldwide. The ability to identify accurately infants at highest genetic risk has become an increasing requirement for potential preventative interventions. Literature searches on T1D and genes were carried out. Early case–control studies all identified the most important region for genetic susceptibility to T1D as the human leucocyte antigen genes on chromosome 6; later shown to contribute almost half of the genetic determination of T1D. The other half is made up of multiple genes; each having a limited individual impact on genetic susceptibility. These genes have been identified by a combination of case–control studies and whole-genome screens. Recent genome-wide association studies have identified novel T1D loci.

Historically there have been many controversial genetic associations with T1D, mostly caused by underpowered case–control studies but these are now decreasing in frequency. While recent progress in the identification of multiple loci associated with T1D has been rapid, the functional variant in each case must be investigated to determine its usefulness in both risk assessment and as a potential therapeutic target.
It is unlikely that all T1D-associated variants will be identified by genome-wide association studies. Copy number variants and epigenetic modifications are likely to play a role in genetic susceptibility to T1D.

A further review on diabetes is on ‘The relationship between type 2 diabetes and dementia’ (Page 131) by Strachan, Reynolds, Frier, Mitchell and Price from the University of Edinburgh.

They state that the prevalence of Type 2 diabetes and dementia are set to rise inexorably over the next 30–40 years. There are now substantial data to suggest that Type 2 diabetes is associated with an increased risk of dementia. They give a narrative review using data from individual studies and review articles together with a Medline search and review of reference lists to identify additional relevant studies. Type 2 diabetes is associated with an increased risk of both Alzheimer’s and vascular dementia, although most affected individuals have mixed forms.

The mechanisms underpinning this association remain to be delineated. Type 2 diabetes is a complex disorder and so it is likely that many different synergistic processes may interact to cause cognitive problems. Recent data suggest that glucocorticoid excess and elevated inflammatory markers may also have a role in the aetiology of diabetes-related cognitive impairment. Large-scale, prospective epidemiological studies are required accurately to delineate the pathogenesis of cognitive impairment in people with Type 2 diabetes. These are underway and randomized trials of diabetes-specific interventions are also starting to include cognitive function as an outcome measure.

There follows a review on ‘Intermittent pneumatic compression in fracture and soft tissue injuries healing’ (Page 147) by Maffulli, Khanna and Gougoulias from the University of Keele, UK.

They state that current methods of fracture care use various adjuncts to try to decrease time to fracture union, improve fracture union rates, and enhance functional recovery. Intermittent pneumatic compression (IPC), one such modality, is used in the management of both fractures and soft-tissue injuries. They performed a systematic review using the keywords ‘intermittent pneumatic compression’, ‘fracture healing’ and ‘soft-tissue healing’.

Sixteen studies on the use of IPC in fracture and soft-tissue healing were identified. These studies demonstrated that IPC facilitates both fracture and soft-tissue healing with rapid functional recovery. They conclude that IPC appears to be an effective modality to enhance fracture and soft-tissue healing.

The next review is on ‘Coeliac disease’ (Page 157) by Leeds, Hopper and Sanders from the Royal Hallamshire Hospital, Sheffield.

They make the point that coeliac disease (CD) is a common but often under diagnosed condition with important complications. CD is due to
immune-mediated gluten intolerance and may present in a number of ways. It has become more frequently diagnosed due to the recognition of the atypical presentations. In recent years, more sensitive and specific serological markers have been developed but the gold standard of diagnosis remains duodenal biopsy. Compliance with a strict, lifelong gluten-free diet is the cornerstone of management, improving symptoms and reducing complications of the disease. The main source of their review was PubMed and the major gastroenterology journals.

It seems agreed that CD is more common than once thought with a prevalence of around 1%. Diagnosis should always be confirmed with a duodenal biopsy. Some complications of CD, especially neurological, are not widely accepted despite growing support from the literature. Management of enteropathy-associated lymphoma has been difficult, and the optimal therapy is not known. The current understanding is such that CD is the most widely understood autoimmune condition. The so-called atypical presentations are becoming the most common presenting features. Alternatives to the gluten-free diet are about to be tried in clinical studies and better serological screening tests may obviate the need for duodenal biopsy.

There follows a review on the ‘Operative management of tennis elbow’ (Page 171) by Karkhanis Frost and Maffulli from the University of Keele, UK.

They show that the results of operative management of tennis elbow are varied, and the indications for surgery are not well codified. The results of some operative techniques are reported frequently, but a clear consensus on whether one technique is more effective over another is yet to be reached. They retrieved articles in peer reviewed journals using the search terms ‘tennis elbow’, ‘lateral epicondylitis/epicondylopathy’ and ‘tendonitis’.

There was a predominantly low score for the quality of most of the studies, with ‘number of patients’, ‘type of study’, ‘outcome criteria and assessment’ and ‘subject selection process’ being the major reasons for the low scores. Also, there was no improvement in quality as measured by the Coleman methodology scores or study designs over the years. The reviewers conclude that it is impossible to advocate one operative technique over another. They also conclude that there is a need for well-designed adequately powered randomized controlled trials in the area of study.