

International Epilepsy Congress

12-16 October, 2003, Lisbon, Portugal

This conference had been planned for Tunisia but George Bush's desert exploits led to a revised location to Lisbon. In protest, a number of members did not attend but the meeting was still large with approaching 2,000 members and the venue was well chosen. The IEC has fewer brief platform research presentations and more review type presentations integrating the research being presented. Whilst being a less dense collection of new research, and so in one way a less time-efficient way to glean new information, this gave the presentations a better context and for me made them more memorable.

In the last two decades MRI has revolutionised our understanding of epilepsy and our ability to diagnose and manage difficult epilepsy. As usual further applications of this fertile technology were abundant with sessions devoted to the fine-tuning of MRI techniques. Cortical dysplasias were conditions only known about from pathological series but MRI has allowed *in vivo* diagnosis of these subtle abnormalities. In one session devoted to these abnormalities two large surgical series were presented, but somewhat confusingly, each surgeon had their own pragmatic classification of these dysplasias although they gave similar results. The extent of the pathological abnormality is often greater than is obvious from neuroimaging and intracranial EEG or magnetoencephalography, where available, is often required to delineate the extent of the epileptogenic zone. These series demonstrated that the dysplastic cortex is not only active in epileptogenesis but that functional MRI may also demonstrate functional capacity within the dysplasia, especially in the less primitive forms.

The presentation of 350 cases of surgically treated dysplasias from Seoul was representative of a recurring theme of "treatment gap" in epilepsy. That is the difference between the best treatment that might be offered and the treatment actually available. Compared to Seoul, Cambridge is certainly the wrong side of the abyss! A session devoted to this issue gave some interesting insights and statistics concerning the treatment of epilepsy around the world. Ethiopia has a population of 65 million, six neurologists and 3 neurosurgeons – I doubt they have too many clinics filled with tension headache. Thirty percent of the population think that epilepsy is due to evil spirits and 45% think it is contagious. A process of active case ascertainment and treatment with phenobarbitone or phenytoin in one region resulted in seizure-freedom in 40% and a substantial seizure reduction in 45% of patients. At the same time education led to a change in attitudes. Non-compliance was still a problem but the reasons were perhaps different from those in Western studies. In 10% the patient stopped treatment on the advice of their family and in 12% on the advice of a traditional healer.

Even more surprising were the inequalities of healthcare seen between different parts of society in the USA. As a background, poverty is estimated to affect 7.8% of whites, 22.7% of blacks, 10.2% of Asians and 21.4% of Hispanics. Blacks suffer 40-50% more epilepsy than whites and epilepsy is often excluded by healthcare insurers on whom working Americans are so dependent for healthcare provision. In rural USA, 7% had never seen a physician for their epilepsy and Navajo Indians tend not to seek medical attention because epilepsy is traditionally ascribed to incest and they are too ashamed.

Sir Peter Mansfield's story of intellectual rags to riches in developing MRI is an inspiration to scientists the world over. But there is a sense that we are getting to the stage

where MRI techniques are being squeezed to extract their last morsel. We need a new basic science stepping stone on which to build clinical advances. Similarly we are coming to the end of the recent spate of new anti-epileptic drugs. Two new ones are likely to become available in the next couple of years. Zonisamide has been used for many years in Japan and now in the States. It will probably prove to be a useful broad spectrum drug, active on sodium channels and T-type calcium channels, like ethosuximide. The other drug is pregabalin which affects voltage-gated calcium channels and excitatory neurotransmitters but not GABA. It is being explored simultaneously in epilepsy, pain, and anxiety treatments. If successful in all these indications, clinical experience of the drug will grow rapidly, although one is invited to feel immediately sceptical of a drug that is not so much a magic bullet as a magic shotgun. All the drugs we have available act on familiar ion channels and neurotransmitters. Whilst this may reflect their importance in epilepsy – nearly all known Mendelian genetic epilepsies are defects in these systems – there is an argument that our choice of animal models selects for a limited number of different types of drugs and new animal models need to be sought. Future generations of drugs may be anti-epileptogenic rather than just anti-epileptic. Drug levels are used by many clinicians, some more than others, but a review of the original literature showed that a significant minority of patients were controlled with levels outside the conventional "therapeutic range", often much lower, even with phenytoin.

Surgical treatments continue to be refined and applied to a wider group of disorders and gamma knife radiosurgery is being explored for mesial temporal sclerosis. Whilst it may prove effective and probably has a lower peri-operative morbidity than epilepsy surgery, it is not clear that it is safer overall. Seizures take 2 years to run down and during this time the risk of sudden death in epilepsy presumably continues. In addition most patients require corticosteroids at some point to control cerebral oedema. Proper comparative studies are needed.

Seizures amongst pilots are rare and are usually due to *de novo* disease such as metastases that would be unpredictable at the time of recruitment. For commercial flights, with a co-pilot, there has never been any damaging consequence from a pilot developing seizures, but for private pilots the risk was significant and often attributable to flying in defiance of regulations. Travelling in a car, fatalities are commoner in the US than in the UK. In 1996, the number of fatalities associated with epilepsy was 96 (0.2% of fatal crashes) compared with 1665 for alcohol and 869 with vascular disease. Although the total risk is low, the disease-specific rate is higher, 9/100,000 population for epilepsy, compared with 2 for cardiovascular disease and 70 for alcohol. The public health risk of seizures in the driving seat is low but the personal risk to the epilepsy patient is much higher.

So what of this will I remember in 5 years? Mainly that which impacts on my daily practice. But the hippocampus being what it is, the most lingering memory will be the polymodal stimulus of sitting on the castle ramparts, watching the sun setting over the rooftops, accompanied by the sound of Pan pipes wafting up from the market square and an ice-cold beer slipping down gently. I can recommend Lisbon.

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Cambridge



Venue: Lisbon, Portugal