

Triggering acute coronary syndromes

Acute myocardial infarction (AMI) and death from coronary artery disease can be triggered by a number of natural and man made triggers. Natural triggers include circadian fluctuations (indicated by increase in cardiac events and death in the morning), seasonal fluctuations (indicated by increase in cardiac events in evenings in winter months), and natural disasters such as earthquakes. Man made triggers have been studied in detail and include heavy and moderate physical activity, emotional upset such as anger, over-eating, lack of sleep, sexual activity, and the use of cocaine and other "recreational" substances. Triggers associated with an increase in AMI and death may share common mechanisms. They are in general associated with increase in sympathetic activity and catecholamine release; the so-called 'flight or fright' response. Both physical and emotional stress may precipitate sympathetic activity and catecholamine release, which can lead to rupture of a vulnerable atherosclerotic plaque and AMI. *Heart* 2006; **92**: 1009-10.

Characteristics of acute coronary syndromes triggered by physical exertion and anger

A study has shown differences in clinical and demographic features of AMI induced by physical exertion and by anger. AMI associated with physical exertion was more likely to occur in patients who are not socially deprived. Exertion AMI was also more likely to be Q wave AMI with ST elevation and greater enzyme release compared to AMI developing in patients who were sedentary before their coronary events. AMI associated with physical exertion occurred more in the afternoon and were unlikely to be associated with premonitory symptoms.

When anger was the trigger, patients tended to be younger, and have lower socio-economic status and premonitory symptoms. They were also more likely to present with ST elevation AMI than with non-ST elevation AMI or unstable angina. Troponin release was not as great in this group. There was more hypertension in patients who had anger as a trigger compared to those with exertion AMI. *Heart* 2006; **92**: 1035- 40.

Adherence to treatment with candesartan in heart failure and mortality reduction

A double blind randomised controlled clinical trial (CHARM) compared the effect of candesartan with placebo in patients with chronic heart failure (CHF). The proportion of occasions patients took more than 80% of their medication was defined as good adherence, and 80% or less as poor adherence. Good adherence to medication was associated with lower risk of death than poor adherence in patients with CHF irrespective of whether they took candesartan or placebo. The findings suggest that the lower risk of death in patients with good adherence to treatment in this trial was due to adherence to effective treatments itself rather than candesartan or other behaviours that affect outcome.

Hence aims at improving adherence to therapy in chronic diseases are likely to improve survival in patients. *Lancet* 2005; **366**: 2005-11.

Doctors must attempt to improve compliance to therapy, as that is likely to improve outcome in chronic diseases.

Metformin for weight gain associated with initiation of atypical antipsychotics in children and adolescents

Atypical antipsychotics effectively treat psychiatric illnesses in adolescents and children. Weight gain and abnormalities in insulin sensitivity, including diabetes, complicates therapy. A randomised double blind placebo controlled trial was conducted in 39 adolescents and children who were given olanzapine, risperidone or quetiapine to evaluate the effect of metformin compared to placebo on the weight, and insulin and glucose levels during a 24-week follow up. Weight stabilised in children receiving metformin while those on placebo continued to gain weight. Four children in the placebo group developed impaired glucose tolerance. No serious adverse events occurred with metformin. The trial concluded that metformin therapy is safe and effective in minimising weight gain, decreasing insulin sensitivity, and abnormal glucose metabolism associated with atypical antipsychotics. *American Journal of Psychiatry* 2006; **163**: 2072-9.

XDR tuberculosis

In early 2005 physicians in a rural hospital in South Africa were concerned by the high rate of rapid death among patients infected with HIV who also had tuberculosis (TB). A study revealed the presence of not only multi-drug resistant (MDR) tuberculosis but what came to be called extensively drug resistant (XDR) tuberculosis. XDR tuberculosis is caused by a strain of *Mycobacterium tuberculosis* resistant to isoniazid and rifampicin (which defines MDR tuberculosis) in addition to fluoroquinolones and at least one of the injectable drugs, capromycin, kanamycin and amikacin. Over half of the patients had never been treated for TB, indicating they had primary infection with an XDR strain of *M tuberculosis*. In 2006 a report by Centre for Disease Control and Prevention and the World Health Organisation (WHO) documented the presence of XDR tuberculosis in at least 17 countries. The data showed that 10% of MDR tuberculosis isolated was in fact XDR tuberculosis. The cause of XDR tuberculosis is the same as for MDR tuberculosis: inappropriate use of second line drugs in a patient for who the first line drugs are failing. Patients then spread the infection to close contacts, who acquire primary XDR tuberculosis. Prevention depends on effective disease control infrastructure, starting with prompt diagnosis and treatment of patients, and directly observed therapy (DOT). *New England Journal of Medicine* 2007; **356**: 656-9.

Aspergillus meningitis in Sri Lanka – a post-tsunami effect ?

An outbreak of meningitis from infection with *Aspergillus fumigatus* occurred in July 2005 in Colombo, Sri Lanka, in 5 previously healthy women, after administration of spinal anaesthesia for caesarian section. Fever, headache and nuchal rigidity were common presentations. Three patients died. Fungal cultures of cerebrospinal fluid or post-mortem brain specimens from 4 patients were positive for *A fumigatus*, which led to treatment with amphoterin B, vorcanazole or both, in the two surviving patients.

Microbiological investigations showed unopened packages of medical supplies to be contaminated with *A fumigatus*. Particularly, 43 syringes from 3 different manufacturers were contaminated with *A fumigatus*. Examination of the Ministry of Health's drug stores identified that 3 regularly used warehouses were full of donations following the tsunami and the regular procurements, including the syringes, were stored in a dusty, humid warehouse with leaks in the roof. Although the exact source of contamination remains unclear, inadequate storage facilities owing to the mass influx of donations was identified as the most plausible explanation, given the sub-optimal storage conditions during the 6-month period after the tsunami. Immediate incineration of all unused syringes led to effective control of the outbreak, with no reports of aspergillus meningitis in 2006. *New England Journal of Medicine* 2006; **356**: 754-6.

This outbreak emphasises the need for attention to storage conditions of drugs and medical supplies at all times, and problems arising from massive donations following disasters.

Measures for reducing pesticide self-poisoning

Self-poisoning with pesticides is a major global public health problem with estimates of 300 000 deaths a year in the Asia-Pacific region alone. WHO now estimates that pesticide ingestion is the most common method of suicide worldwide, and has responded by launching a global pesticides and health initiative. The strategies proposed to reduce the high morbidity and mortality include improved clinical management of poisoning, provision of counselling for vulnerable individuals, and restricted access to toxic pesticides. Measures to restrict access include the development of agricultural practices in which pesticide use is avoided or reduced to a minimum, national bans on highly toxic pesticides and promoting safe storage of pesticides. *Lancet* 2007; **369**: 169-70.

Rosiglitazone and cardiovascular morbidity and mortality

A meta-analysis of randomised controlled clinical trials using rosiglitazone, evaluated outcome data for myocardial infarction and death from cardiovascular causes. In the rosiglitazone group, as compared with the control group, the odds ratio for myocardial infarction was 1.43 (95% confidence interval [CI], 1.03 to 1.98; P=0.03), and the odds ratio for death from cardiovascular causes was 1.64 (95% CI, 0.98 to 2.74; P=0.06).

The authors concluded that rosiglitazone was associated with a significant increase in the risk of myocardial infarction, with an increase in the risk of death from cardiovascular causes that had borderline significance. Although this meta-analysis had some limitations, the potential for serious adverse cardiovascular effects of treatment with rosiglitazone for type 2 diabetes should be considered when prescribing it. *New England Journal of Medicine* 2007; **356**: 2457-71.

Consent and competency in children and young people

Understanding issues of consent and competency in young people is essential for good practice in paediatrics. Difficulties arise in complex situations; for example, when there is disagreement about what is best for a child or young person or there is no one available to give valid consent. If the parents refuse treatment for their child but the clinician believes that the treatment is life-saving or that the child would suffer permanent injury without it, the treatment may be delayed for more discussion. In an emergency, any doubts should be resolved in favour of preservation of life. A written supporting opinion from a colleague and written confirmation from parents of refusal of consent may also be helpful. If parents request treatment for their child, which a clinician believes is not appropriate, when a child is seriously ill, sensitive explanation or involvement of another clinician may be helpful in reaching agreement. Decisions should be taken with regard to both the law and available professional guidance. Doctors should use the expertise of senior colleagues for assistance, and clearly document decision-making, so that decisions made can be understood and judged later. *Current Paediatrics* 2006; **16**: 91-4.

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