Highlighting the latest developments in medicine

With a massive volume of medical research released every year, it is often difficult to keep abreast of the latest developments influencing clinical practice. Here, *RCSIsmj* staff members present their picks of some of the most influential papers of the last year to give an insight into the new and changing face of medicine.

Pre-eclampsia and the risk of end-stage renal disease

Vikse BE, Irgens LM, Leivestad T *et al.* *N Engl J Med* 2008; 359 (8): 800-9. Chosen by: Kristl Vidya Dorschner

Abstract

The authors linked data on all births in Norway since 1967 with data from the Norwegian Renal Registry, which contains data on all patients receiving a diagnosis of end-stage renal disease (ESRD) since 1980, to assess the association between pre-eclampsia/toxaemia (PET) in one or more pregnancies and the subsequent development of ESRD. The relative risk of developing ESRD increased with each pregnancy. Although the absolute risk of ESRD in women who have had pre-eclampsia is low, pre-eclampsia is a marker for an increased risk of subsequent ESRD.

Comments

Pre-eclampsia affects 3-14% of all pregnancies world-wide and carries a 65% risk of recurrence in subsequent pregnancies. Development of PET carries morbidity and mortality risks for mothers during pregnancy and delivery, but little is known about the long-term effects of the disease post partum. This study indicates that there may be a risk of developing ESRD later in life, and women who suffered from PET, particularly in multiple pregnancies, may benefit from regular life-long blood pressure surveillance.

Dabigatran versus warfarin in patients with atrial fibrillation

Connolly SJ, Ezekowitz MD, Yusuf S *et al.* *N Engl J Med* 2009; 361 (12): 1139-51. Chosen by: James Young

Abstract

Dabigatran is an oral thrombin inhibitor with twice-daily dosing – no INR monitoring is required. This trial randomised 18,113 patients with atrial fibrillation to receive dabigatran 150mg BD, 110mg BD or warfarin. Both doses were shown not to be inferior to warfarin in preventing the primary endpoint of the trial: stroke or systemic embolism. The 110mg dose was also associated with fewer haemorrhagic complications. Problems with elevated liver enzymes, which plagued the previous thrombin inhibitor ximelagatran, do not appear to be any more frequent than those associated with warfarin.

Comment

The quest for an effective oral anticoagulant to replace warfarin continues and this drug could change the face of anticoagulation as we know it.

Aspirin use and survival after diagnosis of colorectal cancer

Chan AT, Ogino S, Fuchs CS. *JAMA* 2009; 302 (6): 649-58. Chosen by: Rowena Almeida

Abstract

A prospective cohort study suggests that regular aspirin use after the diagnosis of colorectal cancer is associated with lower risk of colorectal cancer-specific and overall mortality, especially among individuals with tumours that over-express COX-2. The study found fewer cancer-related deaths among regular aspirin users versus non-aspirin users. The researchers indicate that aspirin conferred similar benefits regardless of stage of disease at diagnosis or receipt of standard adjuvant chemotherapy.

Comment

Aspirin was known to reduce the risk of colorectal neoplasia in randomised controlled trials, and inhibited growth and metastases in animal models. Now there is evidence for the influence of aspirin on survival after colorectal cancer diagnosis. These findings may encourage tailored treatment to specific patients using COX-2 as a predictive biomarker, and may lead to aspirin as standard adjuvant therapy in the management of colorectal cancer. It also provides cancer patients with a way to help themselves through lifestyle changes.

Toward clinical therapies utilising haematopoietic cells derived from human pluripotent cells

Kaufman DS. *Blood* 2009; blood-2009-03-191304v1 [epub ahead of print]. Chosen by: Amrita Roy

Abstract

The author conducts a review of the literature to date regarding the use of human embryonic stem cells and induced pluripotent stem cells in haematopoietic cell-based therapies. Kaufman outlines the current obstacles in bringing this technique from bench to bedside, while stressing that these concerns can and should be dealt with so that areas such as transfusion therapies and immune therapies can benefit.

Comment

Using stem cells to create human blood is a huge step forward in transfusion therapies, as it could benefit patients of any blood group. It is also promising as there could be a limitless supply of type O-negative 'universal donor' red blood cells. While the research is promising, the risk of uncontrolled cell growth must be thoroughly examined. Should this be clinically viable, it benefits the patient immensely, and also has potential to be used in military medicine