Journal Scan

A comparative evaluation of prasugrel and clopidogrel in patients with acute coronary syndrome undergoing percutaneous coronary intervention

Authors enrolled patients with acute coronary syndromes undergoing percutaneous coronary interventions from 11 centres in India and randomized them to receive loading and maintenance doses of either prasugrel (60 mg loading followed by 10mg/day maintenance) or clopidogrel (300 mg loading followed by 75 mg/day maintenance) in addition to 325mg daily aspirin. The primary efficacy end point was the percentage inhibition of platelet aggregation (IPA) at 4 ± 1hrs after the loading dose and at 30 ± 3 days after the start of the maintenance dose. Patients randomized to prasugrel had greater IPA at 4hrs (82.5% vs.71.1%) and at 30 days (84.1% vs. 67.4%) than those on clopidogrel ($p<0.01$). The percentage of prasugrel responders (97.4%) were more than percentage of the clopidogrel responders (87.4); p ?0.05. Both drugs were equally well tolerated.

Comment

Prasugrel and clopidogrel are members of the thienopyridine class of P2Y12 ADP receptor inhibitors. Clopidogrel, unlike prasugrel, was issued a black box warning from the FDA on March 12, 2010, as the estimated 2-14% of the US population that have low levels of the CYP2C19 liver enzyme needed to activate clopidogrel may not get the full effect. The present study demonstrates the greater efficacy of prasugrel in platelet aggregation inhibition than clopidogrel. As this study was not powered to test for differences in outcomes and also had relatively short follow up, a much larger study with longer follow up is required to determine, whether the higher efficacy of prasugrel translates into a meaningful reduction in clinical events in the days, months and years after an acute coronary event.

Dasbiswas A, Rao MS, Ramesh Babu P et al. J Assoc Physicians India 2013:61;114-26.

High incidence of acute coronary occlusion in patients without protocol positive ST segment elevation referred to an open access primary angioplasty programme

Patients presenting with suspected acute coronary syndromes who underwent primary percutaneous coronary interventions at a tertiary care centre were categorised according to presenting ECG as group A: protocol positive (ST segment elevation/left bundle branch block/posterior ST elevation myocardial infarction), group B: ST segment depression or T-wave inversion, or group C: minor ECG changes. Prevalence of coronary occlusion was 75% in group A compared with 73% in group B and 63% in group C. Median 12 h postintervention troponin-I (25th-75th percentile) for those with coronary occlusion was significantly higher in group A patients; 28.9 μg/L (13.2-58.5) versus 18.1 μg/L (6.7-32.4) for group B ($p=0.03$); and 15.5 μg/L (3.8-22.0) for group C ($p<0.001$), suggesting greater infarct size in group A.

Comment

This study raises the disturbing prospect, that in patients presenting with chest pain that raises the suspicion of acute myocardial infarction, even those with minor ECG changes may nevertheless harbor a coronary occlusion. This emphasizes the importance of clinical suspicion and the need for in hospital observation even for those patients who do not have typical ECG changes, but are at high risk for acute coronary events. It is not however clear whether primary percutaneous coronary interventions in protocol negative ECG patients improves outcomes.

Apps A, Malhotra A, Tarkin J, Smith R, Kabir T, Lane R, Mason M, Ali O, Rogers P, Banya W, Whitbread M, Ilsley C, Dalby M. High incidence of acute coronary occlusion in patients without protocol positive ST segment elevation referred to an open access primary angioplasty programme. Postgrad Med J 2013;89:376-81.

Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes

In 16 study centers in the United States, authors randomly assigned 5145 overweight or obese patients with type 2 diabetes to participate in an intensive lifestyle intervention that promoted weight loss through decreased caloric intake and increased physical activity (intervention group) or to receive diabetes support and education (control group). At the end of median follow up of 9.6 years the primary outcome a (a composite of death from cardiovascular causes, nonfatal myocardial infarction, nonfatal stroke, or hospitalization for angina) occurred in 403 patients in the intervention group and in 418 in the control group (1.83 and 1.92 events per 100 person-years, respectively; hazard ratio in the intervention group, 0.95; 95% confidence interval, 0.83 to 1.09; P=0.51). This lack of significant reduction in primary end point was despite weight loss which was greater in the intervention group than in the control group throughout the study (8.6% vs. 0.7% at 1 year; 6.0% vs. 3.5% at study end). The intensive lifestyle intervention also produced greater reductions in glycated hemoglobin and greater initial improvements in fitness and all cardiovascular risk factors, except for low-density-lipoprotein cholesterol levels.

Comment

This study is disappointing as no reduction in cardiovascular outcomes occurred in diabetics despite weight loss and better lifestyle in the intervention arm. It may be that the degree of weight loss achieved in this study was not sufficient to reduce cardiovascular outcomes. However in outpatient care it is difficult to achieve and maintain greater weight loss than has been achieved in the intervention arm of this study i.e 6%. Alternatively the use of antihypertensives and statins in both groups of patients my have served to attenuate the effects of lifestyle differences between the two groups.

Cardiovascular effects of intensive lifestyle intervention in type 2 diabetes. Look Ahead Study Group. N Engl J Med 2013.

Incidence and risk factors for extensively drug-resistant tuberculosis in Delhi region

In this study from the All India Institute of Medical Sciences, New Delhi, six hundred and eleven MDR-TB suspects were enrolled from four tertiary care hospitals, treating TB patients in Delhi . Of these 483 patients were infected with MDR M. tuberculosis (M.tb) strains. Eighteen MDR-TB isolates (3.7%) were extremely drug resistant (XDR) M.tb strains. Family history of TB (p 0.045), socioeconomic status (p 0.013), concomitant illness (p 0.001) and previous intake of 2(nd) line injectable drugs (p 0.001) were significantly associated with occurrence of XDR-TB. Only two of the patients enrolled were HIV seropositive, but had a negative culture for M. tuberculosis. 56/483 isolates were pre-XDR M. tuberculosis, though the occurrence of pre-XDR-TB did not show any significant demographical associations.

Comment

An important message from this study is that strains of MDR and XDR TB are in circulation in our national capital. Proper implementation of directly observed treatment (DOTS) program and education to patients to adhere to their drug schedules as well as recall of drug defaulters back into the program are the only means of preventing the emergence of drug resistant mycobateria.

Porwal C, Kaushik A, Makkar N, Banavaliker JN, Hanif M, Singla R, Bhatnagar AK, Behera D, Pande JN, Singh UB. Incidence and risk factors for extensively drug-resistant tuberculosis in Delhi region. PLoS One 2013;8: Epublication

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