e0500 ASSOCIATION BETWEEN RED BLOOD CELL DISTRIBUTION WIDTH (RDW) AND ALL-CAUSE MORTALITY IN PATIENTS UNDERGOING PERCUTANEOUS CORONARY INTERVENTION

doi:10.1136/hrt.2010.208967.500

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Background Red blood cell distribution width (RDW) has been shown to be an independent predictor of mortality in patients with coronary artery disease and in patients with heart failure. However, there are limited clinical studies about the prognostic value of RDW in patients with coronary artery disease (CAD) undergoing percutaneous coronary intervention (PCI). We aimed to examine the association between RDW on admission and the risk of all-cause mortality in patients with CAD undergoing PCI.
Methods We analysed RDW values on admission in 800 consecutively adult patients, who were admitted to our hospital undergoing PCI for CAD. In all patients, a baseline blood sample was collected for routine haematological testing, at the same time the plasma level of high-sensitivity C-reactive protein (hsCRP), erythrocyte sedimentation rate (ESR) and B-type natriuretic peptide (BNP) were tested as well; patients who were anaemic at baseline were excluded. All patients were followed prospectively for all-cause mortality.
Results After a median follow up of five (IR 4.6–5.6) years, there were a total of 48 (6%) deaths. RDW was analysed as a categorical variable with empirically determined cut points of 13.2 and 14.5 (low RDW <13.2, medium RDW >/=13.2 to <14.5, high RDW >/=14.5) based on differences in HR for death among RDW deciles. In univariate analysis, higher RDW was a significant predictor of mortality ($p<0.01$), HR for death in patients with high RDW relative to low RDW was 5.1 (95% CI (CI): 2.0 to 13.0). In the high RDW group, the values of hsCRP, ESR and BNP were higher than that in the low or medium group ($p<0.05$).
Conclusions As RDW is widely available to clinicians as a part of the complete blood cells count, and therefore incurs no additional costs. Higher RDW might be a strong and independent predictor of long-term mortality in patients undergoing PCI who were not anaemic at baseline. Neurohumoral activation may be a mechanistic link between increased RDW and adverse events in patients with CAD undergoing PCI.

e0501 1-YEAR CLINICAL OUTCOMES AFTER IMPLANTATION OF SIROLIMUS-ELUTING STENTS IN PATIENTS WITH CORONARY ARTERY DISEASE AND TYPE 2 DIABETES

doi:10.1136/hrt.2010.208967.501

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Background Drug-eluting stents (DES) have been shown to significantly reduce clinical events and angiographic restenosis in the treatment of coronary artery disease (CAD). We aimed to assess the long-term efficacy and safety of two Sirolimus-Eluting Stents (the biodegradable polymer-coated sirolimus-eluting stents, EXCEL and the polymer-based sirolimus-eluting cobalt-chromium stents, Firebird 2) in the treatment of patients with CAD and Type 2 Diabetes.
Methods A total of 320 consecutive patients with coronary artery disease and type 2 diabetes undergoing percutaneous coronary intervention randomised into two groups (EXCEL group, n=158; Firebird 2 group, n=162). Baseline clinical characteristics, procedural success rate and occurrence of major adverse cardiac events (MACE, a composite of death, myocardial infarction or target lesion revascularisation) during follow-up were recorded and compared between the two groups.
Results During hospitalisation no patient had complications. At 1 year follow-up, both of the EXCEL group and Firebird 2 group had lower occurrence of cardiac events (1.9% in the Excel group and 1.2% in the Firebird group, $p>0.05$).
Conclusion Implantation of EXCEL stent or Firebird 2 stent for patients with coronary artery disease and type 2 diabetes is safe and can reduce major adverse cardiac events in long-term follow-up.

e0502 RELATIONSHIP BETWEEN ACTIVATED CLOTTING TIME AND THE CLINICAL OUTCOMES AFTER TRANSRADIAL CORONARY STENTING

doi:10.1136/hrt.2010.208967.502

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Background Despite significant pharmacological and mechanical advancements in PCI, The optimal value of activated clotting time (ACT) during percutaneous coronary intervention (PCI) with unfractionated heparin remains controversial. No data are available on the relation between the ACT at the end of the procedure (final ACT) and the clinical outcomes after transradial PCI.
Methods A total of 682 consecutive patients with acute coronary syndrome after transradial Stenting were enrolled into our study, final ACT was available in 658 (96%). All patients were pretreated with aspirin and clopidogrel. After radial sheath insertion, patients received 70 IU/kg unfractionated heparin. Baseline clinical characteristics, procedural success rate, major bleeding and occurrence of major adverse cardiac events (MACE, a composite of death, myocardial infarction or target lesion revascularisation) during 30 days and 1 year follow-up were recorded.
Results The median final ACT value was 312 s (IR 262 to 352). At 30 days, the rate of MACE, from the lower to upper groups was 2.7%, 4.0%, and 2.0%, respectively ($p>0.05$), and the rate of major bleeding was 1.2%, 0.9% and 0.6%, respectively ($p>0.05$). During the 1 year of follow-up, the incidence of myocardial infarction was less with the greatest ACT value (>320 s) than in the other 2 groups (4.0%, 7.9%, and 7.6%, respectively; p320 seconds remained associated with a 42% relative reduction in myocardial infarction (OR 0.51, 95% CI 0.24 to 0.89, $p<0.05$). The rate of major bleeding was 0.9%, 0.6% and 0.3%, respectively ($p>0.05$). Death and target vessel revascularisation remained similar in all groups for 320 seconds appears protective after transradial coronary stenting, and this benefit was maintained for <or =1 year. With a transradial approach and antiplatelet therapy, greater ACT values did not correlate with an increased risk of bleeding.

e0503 IMPACT OF RENAL FUNCTION ON OUTCOMES OF PATIENTS UNDERGOING COMPLETE REVASCULARISATION FOR THE TREATMENT OF MULTIVESSEL CORONARY ARTERY DISEASE

doi:10.1136/hrt.2010.208967.503

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Background Chronic kidney disease (CKD) is a strong predictor of adverse cardiac events after revascularisation for patients with multiple coronary artery disease. However, the comparison of the two strategies of revascularisation, percutaneous coronary intervention (PCI) or coronary bypass grafting surgery (CABG), in this context is limited.

Objectives To compare the clinical outcomes of CABG and PCI with drug-eluting stent (DES) among patients with 2-vessel or 3-vessel coronary artery disease and CKD.
Methods Between January 2005 and June 2006, patients undergoing CABG or PCI with DES for treatment of 2-vessel or 3-vessel coronary disease were evaluated for renal function by eGFR calculated using modified MDRD equation. Patients undergoing incomplete revascularisation with PCI were excluded. CKD was defined as eGFR<60 ml/min. all the participants were followed up for 2 yrs. The primary end point of follow-up was the composite of all-cause death, non-fatal myocardial infarction (MI), or cerebrovascular events (CVE). The second end point was repeat revascularisation.
Results After the exclusion of patients undergoing incomplete revascularisation with PCI, 409 patients received complete revascularisation for treatment with 2-vessel disease and 415 with 3-vessel disease were evaluated. In the 2-vessel population, the incidence of primary end point and second end point were both very similar in patients receiving DES and CABG (primary end point: 9.3% vs 8.2%, p=0.753; second end point: 6.1% vs 3.1%, p=0.253). In the 3-vessel population, there was also no significant difference in the frequency of primary end point (11.4% vs 10.5%, p=0.774) between DES (n=167) and CABG groups (n=248). However, patients receiving DES still experienced significantly higher rate of repeat revascularisation as compared with patients who underwent CABG during 2-year follow-up (10.2% vs 4.4%, p=0.022). Multivariate Cox regression analysis of long-term outcome showed that the choice of revascularisation strategy were not an independent predictor of repeat revascularization in patients with 2-vessel disease (HR 1.52, 95% CI 0.53 to 3.98, p=0.387). However, PCI with DES was independently associated with higher risk of repeat revascularisation in patients with 3-vessel disease compared with CABG (HR 2.32, 95% CI 1.57 to 7.33, p=0.024).
Conclusion Compared with CABG, PCI with drug-eluting stent showed similar incidence of death, MI or cerebrovascular events in patients with multivessel disease and CKD, but is associated with increased repeat revascularisation in 3-vessel population, even after complete revascularisation.

e0504 CHRONIC KIDNEY DISEASE AND THE RISK OF STENT THROMBOSIS AFTER PERCUTANEOUS CORONARY INTERVENTION WITH DRUG-ELUTING STENTS

doi:10.1136/hrt.2010.208967.504

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Background Chronic kidney disease (CKD) has been demonstrated to be associated with adverse clinical outcomes for patients with coronary heart disease. However, data on relation of CKD and stent thrombosis after drug-eluting stent (DES) implantation is limited.
Objectives This study was designed to examine whether CKD is associated with higher incidence of stent thrombosis after elective coronary drug-eluting stent (DES) implantation compared with patients with normal renal function.
Methods We consecutively enrolled 2972 patients undergoing elective percutaneous coronary intervention (PCI) with DES. Demographic and clinical data were collected preoperatively. CKD was defined as estimated glomerular filtration rate (eGFR)<60 ml/min, calculated using the modified MDRD equation. The primary outcome was 1-year definite or probable stent thrombosis.
Results Five hundred and ninety four participants (19%) had CKD before procedure. The incidence of 1-year definite or probable stent thrombosis was significantly higher in CKD patients compared with patients with normal renal function (1.7% vs 0.5%, p=0.001). After adjustment for multiple clinical and biochemical covariates, CKD was an independent predictor of 1-year definite or probable stent thrombosis (HR 3.26, 95% CI 1.74 to 8.37, p=0.009).
Conclusion CKD is significantly associated with increased incidence of 1-year definite or probable stent thrombosis in patients undergoing PCI with DES.

e0505 COMPARISON OF THE CLINICAL APPLICATION BETWEEN HOME-MADE FIREBIRD2TM DRUG-ELUTING STENT AND IMPORTED ENDEAVOR-SPRINT DRUG-ELUTING STENT

doi:10.1136/hrt.2010.208967.505

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Background The research and development of drug-eluting stents are mainly concentrates in countries of Europe and America presently, but it is encouraging that the home-made drug-eluting stents are invented and recommended constantly in recent years. For example, Firebird sirolimus drug-eluting stent has been got a widespread application in china today, and its safety and effectiveness are generally acknowledged. Firebird2 sirolimus drug-eluting Co-based alloy supporting system is the second generation DES which is researched and developmented independently by ShangHai MicroPort medical instrument Corporation. It had got the registered certificate in January 15, 2008. It is a new generation drug-eluting stent that bases on the cobalt-based alloy platform, completely new stent structures, a better biological compatibility, and two-layer SBS polymer coating sirolimus drug-eluting stent, which have higher safty and effectiveness. This study was made in the base of Clinical application registration, making a comparison with that of the imported ENDEAVOR-Sprint drug-eluting stent, and makes a further observation on its safety and effectiveness.
Objectives To make a comparison on the safty and effectiveness of home-made Firebird2 sirolimus drug-eluting Co-based alloy stent with that of the imported ENDEAVOR-Sprint drug-eluting stent.
Methods 100 Coronary artery disease cases that Accept interventional therapy were divided into Firebird group (50 cases) and Endeavor group (50 cases) Randomly, the curative effect was compared between two groups.
Results The average ages, sex ratio, hypertension, diabetes mellitus, and myocardial infarction history in two groups have no statistical differentiation. One-vessel, two-vessel and three vessel lesion, bifurcation lesions, chronic total occlusion, and left main lesions in two groups have no statistical differentiation (p>0.05). The average Vascular diameter and target Lesion length in two groups have no statistical differentiation (p>0.05). The operation success rate were 100% in both groups. No thrombosis event happened in Firebird group, one subacute thrombosis event happened in Endeavor group, which a revascularisation was needed. 28 cases in Firebird group were accepted reexaminnation of the coronary angiography (CAG) and one got restenosis, and 2 got restenosis in 19 cases which accepted reexaminnation of CAG in Endeavor group, there was no statistical differentiation between two groups (p>0.05).
Conclusions We can obtain a favourable safty and satisfying near and medium-term curative effects from the implantation of home-made Firebird2 sirolimus drug-eluting Co-based alloy stents in CHD cases, and it has no statistical differentiation when compared with that of the imported ENDEAVOR-Sprint drug-eluting stent.

e0506 APPLICATION OF OVERLAPPED SIROLIMUS-ELUTING STENTS IN TREATMENT OF LONG CORONARY ARTERIES LESION

doi:10.1136/hrt.2010.208967.506

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Objective To evaluate the clinical efficacy of overlapped Excel and Cypher stents in treatment for long coronary arteries lesion.