

GW23-e2618

# THE EFFECTS OF ENDOTHELIAL PROGENITOR CELL TRANSPLANTATION ON MYOCARDIAL INFARCTION IN MICE

doi:10.1136/heartjnl-2012-302920a.156

Yan Chen, Jiangshisen Jiangshisen. *Nanjing JINing Hospital, PR China*

**Objectives** Endothelial progenitor cells (EPC) are thought to be engaged in neovascularisation after myocardial infarction (MI). In most cases, however, autologous EPC seem to be insufficient for recovery. EPC transplantation is a promising therapy for MI. The purpose of the present study was to explore the potential mechanism in EPC transplantation after MI.

**Methods** Mononuclear cells were obtained from enhanced green fluorescent protein (EGFP) transgenic BALB/c mice. Cells were induced cultured, identified for EPC and transplanted into the border zone of infarct myocardium. Frozen sections of myocardium were inspected for EGFP positive cells 7 days after transplantation. Expressions of stromal cell-derived factor-1  $\alpha$  (SDF-1  $\alpha$ ) and vascular endothelial growth factor (VEGF) in the border zone were measured 3 days after surgery. Microvessel density and fibrosis in the border zone as well as cardiac function were assessed 4 weeks after surgery.

**Results** EGFP positive cells formed circular structures 7 days after transplantation. Compared with vehicle, the expressions of SDF-1  $\alpha$  and VEGF in the border zone were enhanced 3 days after EPC transplantation ( $p < 0.05$ ,  $p < 0.01$  respectively). Microvessel density was increased and fibrosis was decreased in the border zone 4 weeks after EPC transplantation ( $p < 0.05$ ,  $p < 0.01$  respectively). Fractional shortening was higher with smaller left ventricular end-diastolic dimension and end-systolic dimension after EPC treatment compared to vehicle ( $p < 0.05$ ).

**Conclusions** EPC transplantation could improve cardiac function and ameliorate cardiac remodelling after MI in mice via participation in neovascularisation and paracrine effects of SDF-1  $\alpha$  and VEGF.