Results shPHD2-GFP-ADSC-CM significantly attenuated the apoptosis of NRVM, TUNEL positive rate decreased 30.3% and caspase-3 protein expression decreased 24.8%, comparing with GFP-ADSC-CM. Prosurvival cytokine IGF-1 in shPHD2-GFP-ADSC-CM significantly increased compared with GFP-ADSC-CM. The anti-apoptotic effect of shPHD2-GFP-ADSC-CM was largely blocked by neutralisation IGF-1.

Conclusions PHD2 inhibition of ADSCs enhances the paracrine-mediated myocardial protection, which may be associated with increased secretion of prosurvival cytokine IGF-1.

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EFFECTS OF PHD2 ON PARACRINE EFFECT OF ADIPOSE DERIVED MESENCHYMAL STEM CELLS MEDIATED CARDIOPROTECTION

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Objectives To determine the roles of prolyl hydroxylase 2 (PHD2) RNA interference on the adipose-derived mesenchymal stem cells (ADSCs)-mediated paracrine effect against myocardial injury and to study its mechanism.

Methods ADSCs of passage 3 were transfected with lentiviral knockdown of PHD2. We established a superoxide damage model in vitro by treating neonatal rat ventricular myocytes (NRVMs) with hydrogen peroxide (H_2O_2, 100 mM) for 6 h. Conditioned medium (CM) of ADSCs was collected for pretreating NRVM. The cell apoptosis was detected by TUNEL staining and caspase-3 protein expression. Prosurvival cytokines VEGF、HGF and IGF-1 secreted by ADSCs were determined by ELISA kit.