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EFFECTS OF CHANGE OF STATINS ON ENDOTHELIAL NITRIC OXIDE PRODUCTION IN VASCULAR ENDOTHELIAL CELLS

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Objectives To investigate the effects of change of statins on endothelial nitric oxide production in human umbilical vein endothelial cells (HUVECs).

Methods HUVECs were exposed to simvastatin (10^{-6} mmol/l) for 24 h. After wash, HUVECs were exposed to lovastatin with similar concentration, or continue to use the primary statin for another 24 h, then the NO production was measured by Griess reagents. Levels of eNOS mRNA after 24 h of change of statins were examined by RT-PCR.

Results Effect of change of statins: Compared with the control levels, continue to use simvastatin increased the NO production by $103\% \pm 31\%$ ($p < 0.05$). Compared with continue use of statin, change of simvastatin by lovastatin the production of NO was reduced by $68\% \pm 7\%$ ($p < 0.05$), but there was no significant statistical difference with control levels. When change of simvastatin by lovastatin HUVECs eNOS mRNA expression was decreased by $53\% \pm 11\%$ ($p < 0.05$) compared with continue use of simvastatin.

Conclusions Change of statins can decrease the production of nitric oxide and the expression of eNOS mRNA, which may account for high cardiovascular events rate in clinical study when statins treatment were changed.