Effect of ginsenoside Rb3 on the retinal vascular endothelial cells stimulated by high glucose

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OBJECTIVE To investigate the effect of ginsenoside Rb3, a compound from pseudo-ginseng, on migration and proliferation of the retinal vascular endothelial cells stimulated by high glucose. **METHODS** Retinal vascular endothelial cells were assigned into the normal group (5.5 mM glucose), high glucose group (25 mM glucose) and ginsenoside Rb3 group (25 mM glucose + ginsenoside Rb3 100, 150, 200 ug/ml respectively). After the cells were treated with different medium for three days, the CCK-8 assay, transwell migration assay, tube formation assay and BrdU proliferation assay were used to observe the effect of ginsenoside Rb3 on endothelial cells. Western blot method was used to examine the protein expression of the YAP1 and P-YAP1 in the retinal endothelial cells. **RESULTS** Compared with the normal group, the cell viability, the number of migrated cells, the tube length and the percentage of BrdU+ cells were increased in high glucose group ($P<0.01$); compared with the high glucose group, the cell viability, the number of migrated cells, the total length and the percentage of BrdU+ cells were inhibited by ginsenoside Rb3 ($P<0.05$ or $P<0.01$). The Western blot results showed that, in comparison to the normal group, the high glucose group showed higher expression of P-YAP1 and YAP1, ($P<0.05$); In comparison to the high glucose group, ginsenoside Rb3 inhibited the expression of P-YAP1 and YAP1 ($P<0.05$ or $P<0.01$). **CONCLUSION** Ginsenoside Rb3 has a protective effect on the retinal vascular endothelial cells against high glucose, which is mediated by YAP1.