

論 文 要 旨

Evaluation of VEGF-A in platelet and micro-RNA-126 in serum
after coronary artery bypass grafting

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Platelet functions are thought to contribute to clinical outcomes after heart surgery. This study was conducted to assess the pivotal roles of vascular endothelial growth factor-A (VEGF-A) and microRNA-126 (miR-126) during coronary artery bypass grafting (CABG). Whole blood was collected for platelet isolation from 67 patients who underwent CABG surgery between July 2013 and March 2014. VEGF-A and miR-126 levels in serum, plasma, and platelets were measured at various time points and compared with clinical characteristics. The platelet count was decreased at 3 days after CABG. This dynamic change in platelet count was larger after conventional coronary artery bypass (CCAB) than off-pump coronary artery bypass (OPCAB). VEGF-A in the same number of platelets (IP-VEGF-A) was increased at 3 days after CABG, followed by an increase of VEGF-A in serum (S-VEGF-A) at 7 days after surgery. The miR-126-3p level in serum (S-miR-126-3p) increased rapidly after CABG and then decreased below preoperative levels. The IP-VEGF-A level on day 7 after CABG in patients with peripheral artery disease (PAD), who suffered from endothelial dysfunction, was higher compared with patients without PAD. Conversely, S-miR-126-3p on day 7 after surgery was lower in patients with PAD than in patients without PAD. Low levels of S-miR-126-3p due to endothelial dysfunction may lead to high IP-VEGF-A, which is closely related to complications after CABG.

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