Application of Platelet Gel in Cardiac Surgery: Effects on Sternal Infection

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Abstract

The use of plasmapheresis in cardiac surgery has failed to show an unequivocal benefit. However, the use of platelet gel may reduce sternal infection rates via poorly understood mechanisms related to a combination of white blood cell content and expedited wound healing. The purpose of the study was to retrospectively evaluate the incidence sternal wound infections in patients undergoing cardiac surgery. Platelet gel patients (PG) (n=134) received topical administration of a mixture of platelet rich plasma, 10% calcium chloride (5mL), and bovine thrombin (5,000 units)(platelet gel). The control group (CT, n=297) did not receive platelet gel, but otherwise received similar sternal wound care. After Institutional Review Board Approval, twenty factors reported in the literature to predispose individuals for sternal infection were recorded along with overall infection rate. No differences existed in any of the risk factors for sternal infection. The incidence of sternal infection was lower in the PG group than the CT group (1.5% vs 4.1%, p=0.040), despite being similar in the incidence of leg (2.2% vs 2.4%, p=NS), urinary tract (1.5% vs 1.7%, p=NS), and systemic infection (3.0% vs 2.0%, p=NS). The incidence of sternal infection in the group receiving topical platelet gel was lower than the control group, despite being at equivalent risk and experiencing similar rates of other infections.

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