

## **The Effect of Platelet-Rich Plasma (PRP) to Promote Epithelialization Speed, Fibroblast and Neovascularization Amount in Third Degree Burn on Male Rabbit**

S. Devina\*, S. Rizaliyana\*\*, M. R. Hutagalung\*\*

Departemen/ SMF Ilmu Bedah Plastik Rekonstruksi & Estetik

Fakultas Kedokteran Universitas Airlangga/ RSUD Dr. Soetomo Surabaya

### **Abstract**

**Background :** In third degree burn, which loss all skin thickness, epithelialization will run edge to edge only, neither from the bed. Growth factor contained in PRP, should be affecting wound healing, resulted in faster epithelialization and also higher amount of fibroblast and neovascularization. Our aims are to proof that PRP promoting epithelialization speed, fibroblast and neovascularization amount in third degree burn.

**Material dan Method :** Sixteen male rabbits are divided into four groups consisted eachly four rabbits : two treatment groups which PRP applied and control one which SSD applied, subdivided into 5-day and 10-day of treatment. Anesthetized with Ketamin-Xylasine, each rabbit got the burn wound by a contact thermal of a metal plat on its back. In the day of sacrificement, each rabbit had the wound excised in plane of muscle and taken also the surrounded healthy skin.

**Results :** There are no epithelialization found. Fibroblast amount are higher significantly in treatment one, either 5 and 10 day, each  $p = 0.004$  dan  $p = 0.008$  ( $p < 0.05$ ). Neovascularization is found no different. To note, based on researcher's observation, PRP-applied wound consistently looks to have the collagen more densely than the control one.

**Keyword :** third degree burn, PRP, epithelialization, fibroblast, neovascularization, PRP in burn