

In-vivo Experiment For The Efficacy Of Hemostatic Agents In Porcine Liver Punch Biopsy Model

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Background : Since the postoperative bleeding are poor prognostic factor, various hemostatic agents have been introduced. In this study, powder-type polysaccharide (Arista™ AH), powder-type thrombin (Avitene®), and powder-type thrombin (Beriplast®) products, which are commonly used hemostatic agents, were included. This experiment was conducted to compare the efficacy between these three hemostatic agents in the porcine liver punch biopsy model.

Methods : 60 punch biopsy lesions were uniformly prepared in the 3 porcine livers. After the initial bleeding grade was evaluated, Arista™ AH, Avitene®, and Beriplast® were applied to each of 15 lesions. Then, the bleeding grade was checked at 1-minute intervals until 10 minutes.

Results : There was no significant difference in the initial bleeding grade for each group. In a comparison of the time to hemostasis between each agent, Beriplast® (median 5 minutes [interquartile range 3–6] showed superior results compared to the other two agents (8 minutes [6–10] in Arista™ AH, $p=0.014$; 6 minutes [6–8] in Avitene®, $p=0.019$). Arista AH™ and Avitene® did not show a statistically significant difference ($p=0.240$). The lesions that failed to achieve hemostasis within 10 minutes was investigated, one lesion (6.7%) in Arista™ AH, two (13.3%) in Avitene®, and one (6.7%) in Beriplast®, and rebleeding was checked in four Arista™ AH (26.7%).

Conclusions : The hemostatic performance of the glue-type thrombin agent was superior in this study. And powder-type agent rebleeds when the shape of the applied hemostatic surface changes easily. It will be important to select an appropriate hemostatic agent according to the characteristics of the agent.

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