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PLATELETS IMPROVES HEPATIC SYNTHESIS IN A MODEL OF ACUTE LIVER FAILURE

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Background: In previous studies using partial hepatectomy (PH) we showed that encapsulated platelets (PLT) increased survival of rats with acute liver failure. The mechanism is still not clearly understood. The aim of this study was to assess the expression of genes related to liver regeneration and function. Methods: PLT were microencapsulated in sodium alginate and transplanted into the peritoneum of Wistar rats (n=15) immediately after PH 90% and compared with control group transplanted with empty capsules (EC, n=15). Animals were euthanized 24
and 48 hours after PH. Liver RNA was obtained and expression of hepatocyte growth factor (Hgf) and its receptor Met; factor V (Fv), and albumin (Alb) were evaluated by Real Time PCR. Statistical analysis was performed using the Student-t test. This work was approved by the ethics committee of HCPA. Results: Hgf expression did not show statistical differences between groups, contrary to Met that was increased in PLT group ($p<0.001$ for each time). For liver function genes, PLT group showed higher expression in any time point for Fv ($p=0.008$ and $p=0.032$, respectively) and for Alb ($p= 0.021$ and $p= 0.033$, respectively). Conclusion: PLT improves hepatic synthesis, measured by factor V and albumin production. Although HGF is a known regulator of liver regeneration, it was not increased in treated animals. However, HGF receptor, Met was increased in PLT group, suggesting an involvement of this pathway in liver regeneration.