Nitric oxide inhibition and consecutive Aspisol application show a prolonged survival of orthotopic transplanted livers in a rat model.

BACKGROUND: It is generally accepted that nitric oxide (NO) plays a crucial role in acute rejection caused by inflammatory responses. Therefore, the purpose of this study was to investigate the effect on survival following arterialized orthotopic rat liver transplantations (o-RLTx) of NO inhibition and consequent blockade of platelet aggregation by application of Aspisol. MATERIALS AND METHODS: Inbred LEWIS-(RT(1)) rats underwent arterialized o-RLTx under ether anesthesia with DA-(RT1av1) rats as organ donors. After liver transplantation, serum parameters were determined and hepatic biopsy specimens were sampled on postoperative days 5, 8, 10, 30, and 90. Sixty-one rats were divided into 5 groups: syngenic controls (group I, n = 12); allogenic controls (group II, n = 11); allogenic with FK506 immunosuppression (group III, n = 12); allogenic with AGH-treatment (group IV, n = 13); and allogenic with AGH/low-dose Aspisol treatment for 5 days after liver transplantation (group V, n = 13) (Bayer, Leverkusen, Germany).

RESULTS: Rats of group V with AGH/low-dose Aspisol treatment showed significantly longer graft survival (18.2 days +/- 1.8 days) compared with group II rats with untreated grafts (11.3 days +/- 1.7 days) the allogenic group IV with AGH treatment (11.2 days +/- 1.8 days; P < .05). Histological examination
revealed moderate graft rejection among the AGH-treated group IV; however, marked platelet aggregation in sinusoids was present, which was not observed in the AGH/low-dose Aspisol-treated animals (group V). CONCLUSION: Our data suggested that simultaneous treatment with AGH/low-dose Aspisol leads to a significant increase in survival and inhibition of platelet aggregation in the graft after orthotopic liver transplantation.