

Successful modulation of portal inflow by somatostatin in a porcine model of small-for-size syndrome

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**Abstract****Background**

Somatostatin may prevent the small-for-size syndrome (SFSS) in subjects undergoing extended hepatectomy by decreasing portal pressure.

**Methods**

Twenty pigs underwent 70% hepatectomy (H70 group, n=7), 90% hepatectomy (H90 group, n=7), or sham laparotomy (control group, n=6). Splanchnic hemodynamics were measured before and after an intraoperative infusion of somatostatin.

**Results**

The portal vein flow normalized to liver weight (PVF/LW) increased in both H70 and H90 groups (from  $125\pm 42$  to  $342\pm 82$  ml/min/100g,  $p=0.031$  and from  $140\pm 46$  to  $530\pm 241$ ,  $p=0.016$ , respectively). The hepatic venous pressure gradient (HVPG) increased in the H90 group only (from  $5.5\pm 5.8$  to  $13\pm 4.9$  mmHg,  $p=0.004$ ). Somatostatin decreased PVF/LW in both H70 and H90 groups (from  $408\pm 224$  to  $360\pm 227$  ml/min/100g,  $p=0.031$  and from  $560\pm 190$  to  $466\pm 189$  ml/min/100g,  $p=0.016$ ), and restored a normal HVPG in the H90 group (from  $14.3\pm 4.8$  to  $7.7\pm 6.1$  mmHg,  $p=0.047$ ).

**Conclusions**

Somatostatin restores a normal HVPG in the setting of SFSS and can be considered as an effective pharmaceutical modality of portal inflow modulation after extended hepatectomy.

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