# Severe Acute Bleeding Management

## Take home message

- External bleeding must be looked at the surgeon’s feet through continuous, low-noise oozing, or even in the abdomen (utility of TEE or fast echo). The latter may be due to a liver wound caused by the retractors in the case of a Clamshell incision, or by a wound from the ECMO cannulas in the retroperitoneum.
- Transfusion must be optimized to limit their impact on outcome. There is a link between blood transfusion and primary graft dysfunction, but no causal link can be established. [*Bottiger BA et al. Journal of Cardiothoracic and Vascular Anesthesia 34 (2020) 30213023*]
- Transfusion is initially based on an empirical approach (RBC:FFP:platelets: 1:1:1), but this must be rapidly adapted using viscoelastic tests (TEG, ROTEM, Clotpro or Quantra) as a goal-directed hemostatic therapy to target the correction of the coagulation disorders. [*Crochemore T et al. Anesthesia & Analgesia 2023 Nov 17*].
- If ECMO is in place, anticoagulation should be suspended until bleeding is controlled. [*Hartwig M. et al. J Thorac Cardiovasc Surg 2022;-:1-26*]

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