

Targeted Bleeding Management Guided by Non-Invasive Haemoglobin Measurement in Surgical Patients

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Objective: To assess blood transfusion decisions in blood losses using a continuous total haemoglobin (SpHb) and non-invasive haemoglobin (Hb) device.

Study design: Double-blinded randomised controlled trial.

Place and duration of study: Marmara University Hospital, Istanbul, Turkey, from March 2018 to December 2019.

Methodology: One hundred and twenty adult patients scheduled for elective major surgery and expected to experience a blood loss greater than 20% of their total blood volume were divided into two groups. These groups were compared for bleeding management with conventional blood gas sampling (Group Hb, the control group) according to Hb monitoring versus SpHb measurement (Group SpHb, the study group).

Results: In the postoperative measurement, there were fewer red blood cells (RBC) in the SpHb group than in the Hb group ($p=0.020$). There was a greater change in the amount of RBC from the perioperative to the postoperative period in the SpHb group compared to the Hb group ($p<0.001$). Postoperative Hb levels of patients in the intensive care unit (ICU) were higher in the SpHb group than in the Hb group ($p<0.05$).

Conclusion: SpHb can provide effective patient blood management in cases of major surgery. It does not cause a delay in the decision of blood transfusion during surgery.