

A strategy for reducing blood-transfusion requirements in elective orthopaedic surgery. Audit of an algorithm for arthroplasty of the lower limb.

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We prospectively audited 79 patients undergoing primary knee or hip arthroplasty (38 knees, 41 hips) and found that 66% (58% of knees, 73% of hips) had at least one unit of blood transfused postoperatively, with a mean transfusion requirement of 13 units per patient (1.1 for knees, 0 to 6; 1.5 for hips, 0 to 4). We then established a new protocol for postoperative blood transfusion. This requires the calculation of the maximum allowable blood loss (MABL) that each individual patient can safely lose based upon their weight and preoperative haematocrit. The total blood loss up to this volume is replaced with colloid. When a patient's total blood loss reaches their MABL their haematocrit is measured at the bedside using the Microspin system (Bayer plc, Newbury, UK). If their haematocrit is low (< 0.30 for men, < 0.27 for women), blood is transfused. As a safety net all patients have their haemoglobin formally checked on days 1, 2, and 3 after surgery and have a transfusion if the haemoglobin levels are less than 8.5 g/dl. We conducted a further audit of 82 patients (35 knees, 47 hips) after the introduction of this protocol. Under the new protocol only 24% of patients required blood (11% of knees, 34% of hips) with a mean transfusion requirement of 0.56 units per patient (0.26 for knees, 0 to 4; 0.79 for hips, 0 to 4). The use of clinical audit and the introduction of strict guidelines for transfusion can change transfusion practice and result in improved patient care. Our transfusion protocol is a simple and effective method of keeping transfusion to a minimum and is particularly useful in departments which do not have the facility to use autologous blood or reinfusion drains for relective orthopaedic surgery.