Green Surgery
Reducing the environmental impact of surgical care

CASE STUDY

Omitting Routine Group and Save Test

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Case Setting

We frequently review patients 5 years and above for suspected appendicitis, mostly treated laparoscopically. Between Nov 20-Oct 21, 392 patients underwent laparoscopy for suspected appendicitis. Prior to our intervention, taking two group and save samples was routine for this procedure. Our data showed that 71% of patients had two group and saves preoperatively and no patients required blood products during their episode. The cost was estimated to be £8,717 with carbon emissions of 635Kg.

Intervention

We agreed a 6-month pilot to omit routine group and save testing for patients undergoing laparoscopy for suspected appendicitis. The general surgeons agreed, however, a risk stratified approach was required to garner buy-in from anaesthetics. We utilised past medical histories and venous blood gasses to ascertain whether group and saves were required. A robust major haemorrhage protocol and appropriate use of tranexamic acid should manage unexpected bleeding whilst cross-matched blood is sought.

Measurement

In the six months following our intervention, there were 189 emergency laparoscopies for suspected appendicitis and 56 (29.1%) patients had valid G&S samples. The cost of the 132 samples was approximated to be £1,848 and CO_2e to be 141Kg. One (0.5%) 73-year-old patient required two units of red blood cells prior to her procedure due to chronic anaemia. Her past medical history and haemoglobin two days prior indicated a pre-operative blood transfusion. In our institution, if there was 100% compliance with the pre-intervention policy of two valid G&S samples per patient, this would have cost £5,670 and produced 401Kg in

carbon emissions for the post-intervention period. The intervention, therefore, saved £3,821 and 261Kg in carbon emissions. Our institution has agreed to adopt a selective approach and not routinely request G&S tests for these cases indefinitely.

Challenges and Enablers

There are preconceptions that laparoscopic procedures carry a higher bleeding risk. When the general surgery team were presented with current literature and transfusion rates from Nov 20-Oct 21, they were keen to adopt a selective approach to G&S testing. Our anaesthetics team required more convincing, therefore, a risk mitigation strategy was developed and presented. Approaching the intervention as a pilot helped provide reassurance that data would be re-examined and safety would be reassessed.

There is compelling evidence in literature to support selective group and save testing in many procedures, however, there is a cultural reluctance to put this into practice.