

## Does a crystalloid prime solution ensure the oxygen demand during isolated limb perfusion (ILP)? - A randomized controlled study

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### Background

Isolated limb perfusion (ILP) is a treatment option for localized metastatic disease. The principle idea is to surgically isolate a region of the body and connect the circulation of this region to an extracorporeal circulation. A high concentration of a chemotherapeutic agent is then delivered to the region where the tumour is localized, while systemic toxicity is avoided. The use of packed red blood cells in the primingsolution is the norm during ILP. The aim of this study was to investigate the possibility to replace an erythrocyte based primesolution with a crystalloid based primesolution while still ensuring the oxygen demand during ILP.

### Methods

In a single center, randomized controlled, non-blinded, non-inferiority clinical trial, 21 patients (median age 74 years, range  $\pm$  50, 62% men) scheduled for ILP were included and randomized 1:1 to either an erythrocytebased primesolution (control group) or a crystalloidbased primesolution (intervention group).

### Results

There was a significant difference in lactate level (mmol/L) between the intervention group and the control group ( $1.6\pm 0.4$  vs  $3.6\pm 0.7$ ,  $p=0.001$ ). No significant differences in oxygen extraction (%) was found ( $17\pm 10$  vs  $9\pm 4$ ,  $p=0.07$ ), oxygen delivery (mL/min) ( $798\pm 473$  vs  $1\ 046\pm 395$ ,  $p=0.25$ ), oxygen consumption (mL/min) ( $109\pm 37$  vs  $125\pm 25$ ,  $p=0.31$ ), regional central venous saturation (%) ( $83\pm 10$  vs  $91\pm 4$ ,  $p=0.07$ ) or INVOS (%) ( $76\pm 14$  vs  $81\pm 11$ ,  $p=0.42$ ) between the intervention group and the control group.

### Conclusion

The main finding of this study showed no significant difference in ensuring the oxygen demand in the treated extremity during ILP without adding packed red blood cells in the primesolution.