Next Generation intraoperative Lymph node staging for Stratified colon cancer surgery (GLiSten): a multicentre, multinational feasibility study of fluorescence in predicting lymph node-positive disease

Helen Andrew,¹ Gemma Gossedge,¹ Julie Croft,² Neil Corrigan,² Julia M Brown,² Nicholas West,³ Philip Quirke,³ Damian Tolan,⁴ Ronan Cahill⁵ and David G Jayne¹*

¹Leeds Institute of Biomedical and Clinical Sciences, St James's University Hospital, Leeds, UK
²Leeds Institute of Clinical Trials Research, University of Leeds, Leeds, UK
³Pathology and Tumour Biology, Leeds Institute of Cancer and Pathology, St James's University Hospital, Leeds, UK
⁴Department of Gastrointestinal Radiology, St James's University Hospital, Leeds, UK
⁵Department of Academic Surgery, University College Dublin, Dublin, Ireland

*Corresponding author

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Plain English summary

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Bowel cancer spreads along channels, called lymphatics, with cells becoming trapped in special glands, called lymph nodes (LN). In surgery for bowel cancer it is necessary to remove the whole tumour with the lymphatics and LN. To guide the extent of surgery, it is important to know whether or not spread to the LN has happened. 5-aminolevulinic acid (5-ALA) is a drug that can make cancers fluoresce (glow). It has been used to guide surgery in other cancers, particularly brain cancer, but has not been used in bowel cancer. It is hoped that giving 5-ALA to patients with bowel cancer will make the cancers and cancer-containing LN glow when viewed by a special blue-light camera and, thus, act as a guide to surgery.

Patients felt to have a high chance of cancer-containing LN on computerised tomography were chosen. 5-ALA was given before surgery and cancer fluorescence was tested using a special blue-light keyhole camera. The presence of cancer within fluorescent LN was confirmed by microscope testing.

Group 1 (n = 18 patients) received 20 mg/kg of 5-ALA. Six patients had fluorescent cancers and three patients had fluorescent LN; only one patient had fluorescent LN containing cancer. Group 2 (n = 26 patients) received 30 mg/kg. Eight patients had fluorescent cancers and four patients had fluorescent LN; but none of the fluorescent LN contained cancer. There were no major 5-ALA side effects.

It can be concluded that 5-ALA is safe, but does not allow cancer-containing LN to be detected with enough accuracy to be useful in guiding bowel cancer surgery.
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