

New Blood Test to Radically Reduce Unnecessary Invasive Procedures for Bowel Cancer and Prostate Cancer Suspects

The Lymphocyte Genome Sensitivity Test is a new blood test being developed by Oncascan Limited. The practical performance of the test has been studied on a trial cohort of bowel cancer GP referrals at Bradford Royal Infirmary. A threshold has been determined below which suspects have neither cancer nor potentially harmful polyps and can thus safely avoid an endoscopic investigation. Approximately half of the cohort recorded LGS Test scores less than this threshold. A similar study on a cohort of prostate cancer suspects is underway to determine what proportion could safely avoid a biopsy.

Background

Colonoscopy is used to detect bowel cancer and allows the removal of pre-cancerous polyps, but it is invasive, painful, time consuming, expensive and carries some risk. The often indistinct reasons for referral (eg change of bowel habit, bloating, noticing blood in faeces) results in a high number - around 70% - of false positives; ie patients who do not actually need colonoscopy.

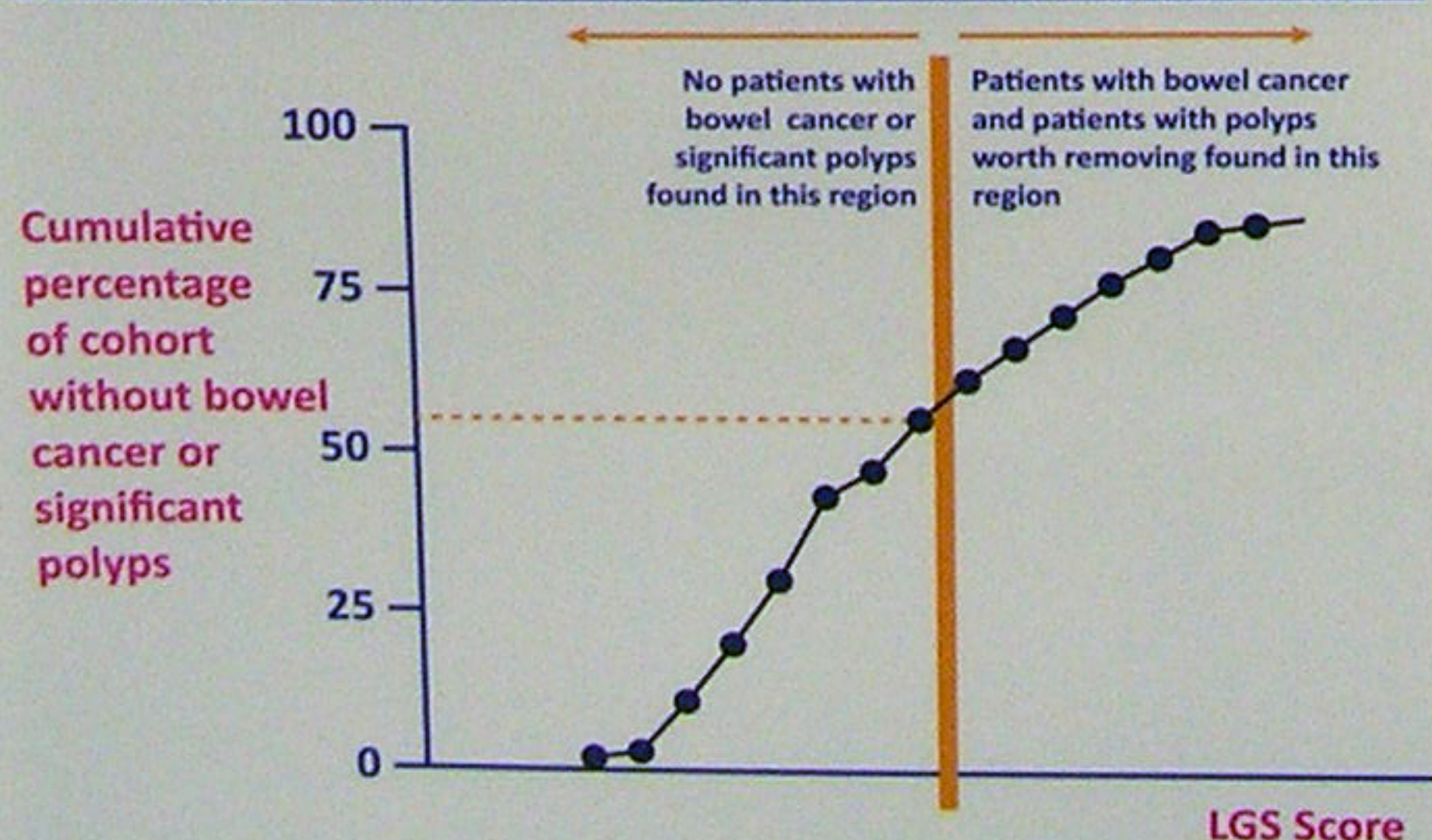
Clinicians are keen to reduce this proportion in order to benefit patients. We have conducted a study on a cohort (n=220) of GP referrals attending Bradford Royal Infirmary which shows that, using a new and cost effective blood test, it is possible to identify, safely and in advance, over half of those patients who would otherwise have had an unnecessary colonoscopy.

In England, NICE have estimated that there are ~ 250,000 unnecessary colonoscopies carried out each year. This translates to some 6 million per annum globally. Potential patient benefits and healthcare provider savings are therefore very considerable.

The LGS Test

The patented Lymphocyte Genome Sensitivity ("LGS") Test uses the increased sensitivity to ultra-violet ("UV") induced DNA damage of lymphocytes from cancer patients to distinguish between those with and without cancer. It works by using a device that exposes blood cells to UV radiation and then quantitatively assessing DNA damage, all in a controlled and reproducible manner. Oncascan has licensed the exclusive worldwide rights to the LGS Test from the University of Bradford.

Results of Bowel Cancer Study



The above graph shows the preliminary results of a cohort of 220 GP referrals with suspect bowel cancer who donated an anonymous sample of blood before they were investigated in the conventional way. The blood was assayed by the LGS Test and a score obtained. All those cases who were subsequently found to have bowel cancer or polyps worth removing were above a threshold value. Over half of the "clear" subjects were below this value so, if the LGS Test had been used as a predictive tool, potentially these candidates could have avoided an unnecessary procedure.

Prostate Cancer Study

We are now carrying out a further study, in conjunction with the University of Bradford, to determine the benefits of using the LGS Test with prostate cancer suspects. The limitations of currently used tests result in many unnecessary prostate biopsies with attendant patient discomfort and infection risk. We believe that it will be possible to reduce unnecessary biopsies in future.

Instrument Automation

Each LGS Test currently carried out requires several hours of a skilled technician. To be a practical test we need to reduce the skill level and the labour hours involved. This demands significant automation which, in turn, requires some new technology. Our focus in 2015 is on building a working technology demonstrator.



Study Funding



Oncascan Limited was awarded an SBRI Healthcare phase 1 development contract for the bowel cancer study and is part way through a phase 2 contract for the instrument automation. The prostate cancer study is 75% funded by Innovate UK (Technology Strategy Board).

Innovate UK
Technology Strategy Board

The views expressed here are those of the authors and not necessarily those of the funding partners.

Collaboration and Investment

Oncascan expects to realise the full potential of the LGS Test together with technical and commercial partners. Significant investment will also be required. Accordingly we would welcome discussions with prospective collaborators and shareholders.

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