



Biomarkers for Colorectal Cancer

Caspases-4 and -5 as novel targets with diagnostic and therapeutic potential for colitis-associated colorectal cancer.

Overview

Trinity College have identified caspases-4 and -5 as potential targets for limiting intestinal inflammation and, furthermore, identified epithelial-expressed caspases-4 and -5 as novel targets with diagnostic and therapeutic potential for colitis-associated colorectal cancer (CRC)

Background

The pathogenesis of 15% of human cancers has been linked to inflammation. One of the most prevalent inflammation driven cancers is colitis-associated colorectal cancer. Annually in Ireland - CRC is responsible for 15% of all cancer related deaths with an average of 1445 cases

Early stages of progression to CRC, particularly distinguishing between inflammation and true dysplasia, is not straightforward, and there is a large amount of variation between pathologists' identification and grading of dysplasia. Patients who have had colitis for >10 years are advised to undergo regular colonoscopy to detect preinvasive neoplastic lesions. High grade inflammation is also regarded as an indication for colectomy.

There is a clear requirement for an additional early marker of dysplasia in this context.

Technology

Inflammatory caspase expression has been examined in IBD patients. An examination of adjacent-normal, inflamed and tumour tissue from patients with ulcerative colitis-associated CRC confirmed that stromal expression of caspases-4 and -5 is increased in inflamed and dysplastic tissue, while epithelial expression is restricted to neoplastic tissue

The increased expression of enzyme proteins 'caspase-4' and 'caspase-5' can be used as a biomarker, and as novel therapeutic targets for inflammation and disease activity in irritable bowel disease and CRC patients.

Advantages

- Improved accuracy of diagnosis
- Early treatment
- Reduction in colectomies
- Improvement in quality of life.

Market Opportunity

Reliable diagnostic for early stage CRC in colitis patients

Novel therapeutic target for colorectal cancer



Technology Sector

Diagnostics, Therapeutics

Patent Details

National phase

[WO2016030020](#)

Opportunity

Research collaboration

Researcher(s)

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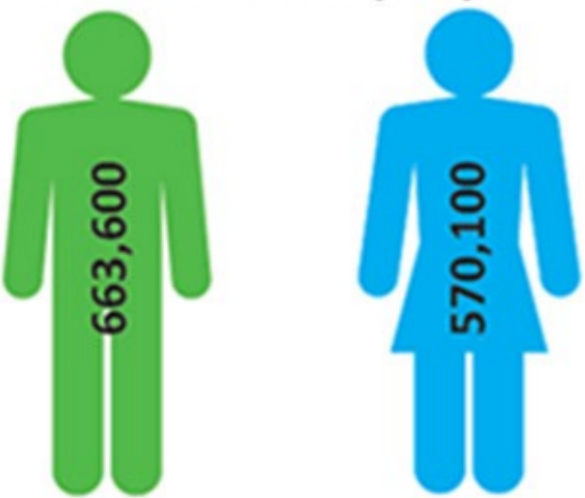
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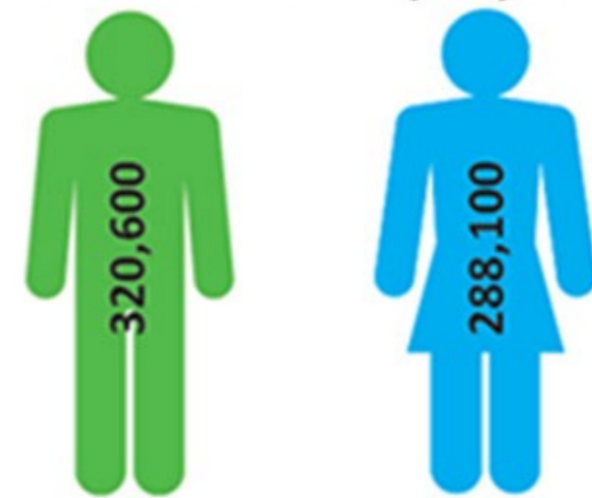
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EC01-493-01

Estimated cases per year



Estimated deaths per year



Burden of colorectal cancer:	worldwide	Europe
Incidence	1,230,000	450,000
Mortality	609,000	230,000

Source: Globoscan 2008