The CLIO consortium: Optimization of Cerenkov Luminescence Imaging for Image-Guided Cancer Surgery

From 2014-01-01 to 2016-11-30, closed project

Objective

Cancer is the second largest cause of death and morbidity in Europe, with more than 3 million new cases diagnosed each year. The most effective treatment strategy for most forms of cancer is early detection followed by surgery. However, cancers frequently recur following surgery. For example, nearly 1 in 4 breast cancer patients will see their tumour recur after surgery. The consequences of cancer recurrence include repeat operations, delayed adjuvant treatment, increased likelihood of distant recurrence, poorer cosmetic and functional outcomes, emotional distress, and financial cost. The financial costs are staggering. Europe spends €125 billion annually on cancer care, approximately 5% of which is managing post-surgical recurrence.

Tumours recur after surgery primarily due to incomplete excision of the tumour or inadequate clearance of surgical margins. Tumours fail to be completely excised because the surgeon only has the visual appearance of the tumor and palpation to differentiate malignant from benign tissue. Consequently, there is an urgent clinical and market need for improved tools to detect cancerous tissue during surgery.

Real-time imaging during surgery would enable the surgeon to more accurately resect tumors and thereby reduce the likelihood of post-surgical recurrence. Cerenkov luminescence imaging (CLI) is a ground-breaking imaging modality that can provide real-time molecular imaging during surgery.

The CLIO consortium will develop a Cerenkov luminescence imaging device and a handheld intraoperative beta particle imaging device for image-guided surgery as well as imaging services for the pharmaceutical and medical device sectors. The imaging services will enable pharmaceutical and medical device clients to improve the efficacy evaluation of pharmaceutical and surgical device products. The consortium contains world-leading expertise in medical device product development, clinical and preclinical imaging, oncologic surgery, and surgical device evaluation.

Related information

Report Summaries

Periodic Report Summary 1 - CLI (The CLIO consortium: Optimization of Cerenkov Luminescence Imaging for Image-Guided Cancer Surgery)
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**Subjects**

Regional Development

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