Why we focus on cancer-related Inflammation

Cancer-related inflammation is an important process contributing to malignant disease, with common and defined factors at different stages of progression.

Until recently, the field was driven by the hypothesis that extrinsic inflammatory pathways could support or initiate cancer i.e. that inflammation causes or promotes cancer. However, recent evidence points to intrinsic inflammation, activated by genetic events that cause neoplasia, i.e. cancer causes inflammation.

Activated oncogenes such as ras in pancreatic cancer, or inactivated tumour suppressors, such as pVHL (Renal cell carcinoma), cause significant changes in the tumour microenvironment. Interactions between the stromal compartment (cellular & acellular components) and malignant cells significantly impact on conventional therapies.

To overcome these hurdles our work focuses on cancer-related inflammation as a therapeutic target & translation of findings into the clinic. Successful examples:

- Translation of anti-cytokine and chemokine therapeutics
- Innate and adaptive immune modulators
- Breaking down non-malignant blocks to early clinical trial entry at Barts Health.

What we do

- We investigate the hypothesis that cancer-related inflammation can alter immunity, angiogenesis, disease promotion, progression and response to therapy.
- The underlying mechanisms are deregulated and represent potential therapeutic targets to modify responses in cancer.
- We are conducting early phase clinical trials of new agents targeted against the key drivers of cancer associated inflammation.
Key Publications

- Rei et al. Major contribution of gamma delta T cells to IL-17A production and ovarian cancer cell growth in vivo. *Immunology;* 140, 160-160

Who does the research

Prof. Fran Balkwill  The role of chemokines & cytokines , ovarian cancer
Dr. Melania Capasso  B cell function in solid malignancy & B cell malignancies
Dr. Esther Castellano Sanchez  Oncogenic Ras signalling & tumour microenvironment, lung & pancreas

Major Funders

- Cancer Research UK
- European Union (FP7)
- Leukaemia and Lymphoma Research
- Pancreatic Cancer Research Fund