features of pT1, pT2, and pT3a staging categories for ccRCC require revision.

DEVELOPMENT OF NOVEL BIOMARKERS PREDICTIVE OF ENDOCRINE SENSITIVITY IN BREAST CANCER

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Approximately 75% of breast cancers express oestrogen receptors (ER), progesterone receptors (PR) or both. Endocrine therapy is a cornerstone of systemic therapy for ER+ breast cancer in both the adjuvant and metastatic setting. Despite adjuvant endocrine therapy, over 20% of women with early-stage disease suffer a relapse which can occur years or decades after diagnosis.

We have recently shown that a physical interaction between ER and PR exists and is potentiated by the presence of oestrogen and progesterone.¹ PR alters the interaction between ER and chromatin to change the transcriptional output of the ER complex. We have quantified interactions between ER and PR in breast cancer to demonstrate that low ER/PR interactions are associated with relapse on adjuvant aromatase inhibitors.

We are utilising a novel patient-derived explant (PDE) culture model to measure the sensitivity of tumours to oestrogen, progesterone, tamoxifen and targeted treatments including CDK4/6 inhibitors. We are currently recruiting patients to build a library of explanted tumours with functional response data to treatment in PDEs. We will use novel assays including the ER-PR interaction assay, expression data and DNA sequencing to develop new tools to predict treatment response which may be translated into clinical practice.

Reference

1. Snell CE, Gough M, Liu C, *et al.* Improved relapse-free survival on aromatase inhibitors in breast cancer is associated with interaction between oestrogen receptor-alpha and progesterone receptor-b. *Br J Cancer* 2018; 119: 1316–25.

GASTRIC BIOPSIES THAT KEEP YOU UP AT NIGHT

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The diagnosis of gastric carcinoma can be challenging in several situations. Diffuse-type carcinomas can be readily overlooked, especially when inconspicuous tumour cells infiltrate between benign gastric glands and elicit little, if any, stromal response. Metastases, particularly from the breast, bear striking similarities with gastric carcinomas and should always be considered in the

differential diagnosis when poorly cohesive tumours develop in women. Benign mimics of diffuse-type adenocarcinoma can also result from artifactual or inflammation-induced disruption of non-neoplastic gastric epithelium. Benign foveolar epithelial cells assume a globoid appearance (i.e., signet ring cell change) when they are not confined to the basement membrane. Tubular adenocarcinomas show glandular crowding, branching, villiform or cribriform growth, and cystically dilated crypts that can simulate regenerative atypia. Rare tumours are extremely well-differentiated with minimal architectural abnormalities and only slight nuclear enlargement. Distinction between primary carcinomas and their potential mimics will be discussed during the presentation.

THE FLAT DUODENAL BIOPSY: IT'S NOT JUST SPRUE ANYMORE

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The vast majority of duodenal biopsy samples are essentially normal. However, approximately 5% show variably severe villous abnormalities, intraepithelial lymphocytosis, neutrophilic inflammation, and crypt cell apoptosis. The differential diagnosis of these features includes a variety of immune-mediated disorders, infections, and medications, most notably, coeliac disease. Peptic duodenitis generally produces changes confined to the duodenal bulb, whereas other diagnostic considerations tend to produce inflammatory abnormalities distal to the duodenal bulb. Crohn disease, autoimmune enterocolitis, hypersensitivity to non-gluten dietary proteins, and common variable immunodeficiency represent important immune-mediated disorders that cause a malabsorptive pattern of mucosal injury. Medications, particularly members of the sartan family of anti-hypertensive agents, and targeted drugs, such as checkpoint inhibitors, are important causes of chronic duodenal injury among older adults. Bacterial overgrowth/stasis syndrome, viral infection, and parasitic infections can cause similar changes. The purpose of this presentation is to discuss the various histologic features of these disorders and distinguishing criteria.

PERSISTENT PROBLEMS IN COLORECTAL CANCER REPORTING

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The Tumor, Node, Metastasis (TNM) staging system was developed by the American Joint Committee on Cancer (AJCC) and the Union for International Cancer Control (UICC) to provide standardised, data-driven criteria for cancer reporting. The most recent 8th edition of the AJCC Cancer Staging Manual defines criteria for stage assessment and enumerates concrete guidelines for cancer staging, although it provides only sparse guidance for pathologists who apply these criteria. The most problematic aspect of tumour stage assignment is the recognition of pT4 lesions. Serosal penetration is most readily recognised when tumour cells are present on the peritonealised surface, or when tumour cells are present at the serosal surface in