CTE 5 (Technologists)
Tuesday, October 24, 14:30-16:00

Session Title
Gastrointestinal Imaging

Chairs
Nick Gulliver (London)
Iulia Larg (Cluj-Napoca)

Programme

14:30 - 15:00 Gill Vivian (London): Pearls & Pitfalls in Gastrointestinal Imaging with Conventional Nuclear Medicine Scintigraphy
15:00 - 15:30 Mattia Bertoli (Brescia): The Clinical Use of PET-CT in Upper Gastrointestinal Oncology
15:30 - 16:00 Søren Hess (Odense): The Clinical Use of PET-CT in Lower Gastrointestinal Oncology

Summary
Gastric emptying scintigraphy is a safe, non- invasive method for assessing the ability of the stomach to empty which has been used clinically for many years. It is regarded as a "gold standard" to assess gastric emptying of both solids and liquids allowing assessment of early, mid and late emptying, each of which may be altered by pathology. Similarly, scintigraphy is recommended for detection of altered small-intestine transit in subjects with suspected diffuse gastrointestinal motility disorder. These studies are often performed as with additional imaging and analysis after a standard solid or liquid gastric-emptying study. SeHCAT or tauroselcholic (Se-75) acid is a widely available test providing an objective diagnosis of **Bile Acid Malabsorption** (BAM) and enabling treatment with bile acid sequestrants. Gastrointestinal bleeding scintigraphy (GIBS) is a diagnostic study using 99mTc-RBCs or sulphur colloid that is performed on patients with suspected gastrointestinal bleeding to determine whether the bleeding is active, to localize the bleeding site, and to approximate the bleeding volume.

In upper gastrointestinal oncology, indications for use of FDG PET-CT in oesophageal and gastric malignancies include staging/restaging of patient suitable for radical treatment, including patients who have received neoadjuvant treatment. Oesophageal cancer has been reported to have a relatively poor prognosis with only a 20-30% 2-year survival rate. In the upper two-thirds of the oesophagus squamous cell carcinomas (SCC) predominate with alcohol and smoking being the main risk factors (in the distal oesophagus/gastro-oesophageal

junction mostly adenocarcinomas). FDG PET-CT may be indicated in suspected recurrence when other imaging is negative or equivocal.

Colorectal cancer (CRC) is among the most commonly diagnosed cancers worldwide. The use of imaging in CRC has significantly evolved over the last twenty years. The liver is the most common site of metastases in CRC with up to 25% of patients presenting with hepatic involvement at initial diagnosis. When assessed by FDG PET-CT, metabolic response to chemotherapy correlates well with clinical response, tumour biology and disease-free survival in CRC. Finally gastrointestinal stromal tumours (GISTs) are a rare type of sarcoma found in the digestive system. Most GISTs are highly FDG avid. PET-CT is an ideal imaging tool in GIST for staging the disease and assessing therapeutic response.

Educational Objectives

- To understand the basic principles of various gastrointestinal imaging procedures including gastric emptying, colonic transit, bile acid malabsorption and gastric bleed studies.
- To understand methods of best practice in these studies and be aware of common pitfalls associated
- To describe the clinical role of PET-CT in assessment of cancer of the upper gastrointestinal tract (including oesophagus and stomach)
- To describe the clinical role of PET-CT in assessment of cancer of the lower gastrointestinal tract (including colorectal and hepatic metastatic disease and GISTs)

Key Words
Gastric emptying, gastrointestinal bleeding, bile acid malabsorption, gastrointestinal oncology

Take Home Message

"Happiness requires three things: a good bank account, a good cook, and good digestion" - Rousseau. Many well-established conventional nuclear medicine procedures exist for assessing a range of gastrointestinal functions. In recent years, FDG PET-CT has given oncologists a new tool in their armamentarium for assessing cancers of the gastrointestinal tract, significantly improving patient outcomes.