PWE-020

DIAGNOSTIC MEDICAL RADIATION IN INFLAMMATORY BOWEL DISEASE: PRIMUM NON-NOCERE?

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Introduction Patients with inflammatory bowel disease (IBD) are frequently exposed to diagnostic medical radiation for the diagnosis and evaluation of their disease. Despite increasing awareness of the potentially serious downstream effects, few studies have quantified radiation exposure in IBD patients.

Methods We conducted a retrospective review of 220 consecutive patients attending IBD clinics at our hospital. Clinical data including demographics, disease characteristics and therapy were obtained from case note and electronic patient record review. All incidences of diagnostic medical radiation from initial diagnosis until 30 June 2010 inclusive were recorded from case note and computerised radiology database system review. The radiation dose for each procedure was obtained from published tables from the Royal College of Radiologists, UK. Effective dose for each procedure was calculated by multiplying this value by the number of procedures during the study period. The sum of doses received was the cumulative effective dose.

Results One hundred and one of the 220 IBD patients reviewed were female, 119 were male. The median age was 48 (range 17–88) and mean disease duration 10 years. One hundred and one patients had Crohn's disease, 111 patients had ulcerative colitis and 8 patients had an indeterminate colitis. The mean and median cumulative effective radiation doses were 11.61 mSv and 7.21 mSv respectively. A cumulative radiation dose greater than 10 mSv was seen in 41.8% (92) patients and greater than 25 mSv in 13.2% (29) patients. In 9 patients the cumulative effective dose was greater than 50 mSv. Crohn's disease was associated with a higher cumulative effective dose with exposure exceeding 10 mSv in 62.4%, 25 mSv in 22.8% and 50 mSv in 8.9% patients respectively. CT imaging accounted for 43% and barium studies for 32% of the total cumulative effective dose exposure. Thirty-nine of these patients had small bowel magnetic resonance (MR) studies in the last 2 years as an alternative to ionising radiation procedures.

Conclusion Patients with IBD, particularly those with Crohn's disease are exposed to significant amounts of diagnostic medical radiation in their lifetime. The increased risk of cancer from cumulative radiation coupled with the inherent risk of colorectal malignancy in long standing IBD and the potential for immunomodulator drugs such as azathioprine to increase the risk of cancers (eg lymphoma) is of great clinical and public health concern. Clinicians must remain vigilant to these risks when evaluating these patients and radiation exposure should

be minimised and where possible alternatives such as intestinal ultrasound and MR imaging preferred.

Competing interests None.

Keywords Crohn's disease, diagnostic medical radiation, inflammatory bowel disease, radiation, ulcerative colitis.