

## Increased Incidence of Second Malignancy in Patients with Neuroendocrine Tumours (NETs) of the Ileum and Colon (MGC)

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**Background:** In patients with NETs an increased incidence of second malignancy has been observed. The present study aims to identify the frequency of second or third malignancy in patients with primary tumours of the midgut and to establish which cancers most frequently occur.

**Methods:** Patients with MGC diagnosed between 1971 and 2012 were identified. Diagnosis was confirmed by pathology or by clinical syndrome with circulating biomarkers. Patient demographics were recorded and all those who could be followed to December 31, 2012 or to death were included. Population data of second malignancy in Northern Ireland was obtained from the Northern Ireland Cancer Registry.

**Results:** MGC was confirmed in 266 patients. In 203 subjects there was appropriate follow up. In 197 of these diagnoses were confirmed by pathology. Median age was 65.1 (range 22.5-96.0) years at diagnoses and male female ratio was 107:96. Second malignancy occurred in 51 patients (a third in 3/51). Breast, lung, meningioma, myeloma, oesophageal or ovarian cancers each occurred in one patient, bladder or prostate in two and kidney or lymphoma in three. Eight patients (3.9%) had a second primary NET in the absence of MEN. Eleven patients had skin cancer (2/11, malignant melanoma) sixteen cancer of the colon and three rectum (colorectal 9.4%). Omitting non-melanoma skin cancer 43/203 patients with MGC had a second malignancy (including 2 with a third). This gave an incidence of second malignancy of 25.1% and excluding non-melanoma skin cancers 20.89%. The incidence of second malignancy in Northern Ireland (1993-2011) was 10.35% and excluding non-melanoma skin cancer 5.9%. The probability of second malignancy in MGC was 3.7 (2.8-4.7) times higher than in the general population.

**Conclusion:** Second malignancy is high in patients with MGC and cancer of the colon and rectum very high. Patients with MGC should be screened regularly for colorectal cancer.