

7-year experience using ¹⁸F-FDG PET/CT for diagnosis and surveillance of testicular germ cell tumours: a descriptive analysis from Guy's & St. Thomas NHS Foundation Trust

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Background

- Testicular germ cell tumours (GCT) are one of the most common neoplasms in young men
- ¹⁸F-fluorodeoxyglucose positron emission tomography computed tomography (¹⁸F-FDG PET/CT) can provide valuable information for the accurate management of these patients, but its use in routine practice remains unvalidated
- Here we review the indications of ¹⁸F-FDG PET/CT scans performed at Guy's & St. Thomas NHS Foundation Trust (GSTT) for the diagnosis and surveillance of testicular GCT

Methods

- We retrospectively analysed the data of patients with testicular GCT who underwent ¹⁸F-FDG PET/CT between January 2015 and April 2022
- ¹⁸F-FDG PET/CT indication was classified into 4 different categories:
 - Suspected metastatic disease at diagnosis
 - Suspected disease recurrence
 - Residual disease assessment after chemotherapy
 - Other: treatment with carboplatin AUC10 (CarPET regimen), surveillance and response assessment

Results

- 82 patients were included and 134 ¹⁸F-FDG PET/CT scans were reviewed
- 35 patients had more than 1 scan during follow-up (42.7%)
- Median PET per patient was 1 (range 1-6)

Table 1. Patients' characteristics (n=82)

Median age (range)	36 years-old (18-82)	
Ethnicity (%)	White	52 (63.4)
	Asian	5 (6.1)
	Not specified	25 (30.5)
Orchidectomy (%)	Primary	72 (87.8)
	Secondary (after ChT)	7 (8.5)
	No orchidectomy	3 (3.7)
Histology (%)	Pure seminoma	48 (58.5)
	Mixed germ cell tumour	26 (31.7)
	Embryonal carcinoma	2 (2.4)
	Pure teratoma	1 (1.2)
	Other	5 (6.1)
Median size (range)	36.5 mm (5-140)	
Rete testes invasion (%)	Present	33 (40.2)
	Absent	27 (32.9)
	Not reported	22 (26.8)
Lymphovascular invasion (%)	Present	15 (18.3)
	Absent	43 (52.4)
Final disease stage (%)	Not reported	24 (29.3)
	Stage I	45 (54.9)
	Stage II	28 (34.1)
	Stage III	9 (11)

Conclusion

- ¹⁸F-FDG PET/CT was primarily used for patients with suspected metastatic, relapsed, or residual active disease (>60% of the indications), and impacted management decisions
- Additional efforts should be made to include ¹⁸F-FDG PET/CT recommendations in clinical guidelines to standardize its use

