

STATISTICAL DATA ON ADMINISTRATION OF PD-1 INHIBITORS IN CANCER PATIENTS IN GREECE AND IMPACT ON FDG PET/CT IMAGING SERVICES

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Introduction: PD-1 inhibitors nivolumab and pembrolizumab (trade names Opdivo® and Keytruda® respectively) are novel immunotherapy drugs approved for melanoma, NSCLC, RCC, Hodgkin lymphoma, head and neck SCC and urothelial carcinoma. They can be used alone or in combination with other immunotherapy or chemotherapy.

Purpose: To record the frequency and the indications of nivolumab and pembrolizumab administration in Greece, to compare the data with current guidelines, and to describe the potential impact of the data on FDG PET/CT service development.

Methodology: Data for the last quarter of 2019 were collected from the central EOPYY Pharmacy in Athens, where nivolumab and pembrolizumab are exclusively provided to the patients with the receipt of the electronic prescription from the oncologist. The indications were recorded for the 1034 prescriptions received by the Pharmacy during this time period.

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Results:

	Nivolumab	Pembrolizumab
NSCLC	324 (61.7%)	349 (68.5%)
RCC	64 (12.1%)	11 (2.1%)
Head/neck SCC	40 (7.6%)	14 (2.7%)
Melanoma	37 (7%)	33 (6.4%)
Urothelial cancer	22 (4.1%)	29 (5.6%)
Hodgkin lymphoma	8 (1.5%)	4 (0.7%)
Other (HCC, gastric, anal, colorectal, gynaecologic, thymomas, mesotheliomas, sarcomas)	30 (5.7%)	69 (13.5%)
Total	525	509

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Discussion: The main indications for PD-1 inhibitor administration include types of cancer which are routinely followed up with FDG PET/CT. Nuclear Medicine physicians should be aware of the physiology of FDG distribution after immunotherapy (e.g. avidity due to presence of leukocytes in the tumour microenvironment) and of the pitfalls (e.g. the phenomenon of pseudoprogression). This is important as results from FDG PET/CT imaging may guide the therapeutic decision for use of these products in patients with FDG positive residual or recurrent disease.

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Discussion: FDG positivity is likely the most useful evidence for justification of immunotherapy administration in types of cancer which are not included in the products' SPC (~10% in our sample). As FDG PET/CT is method of choice for assessment of response to immunotherapy [1, 2], this pool of patients may lead to an increase of demand for PET/CT services and may drive changes in reimbursement policies.

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