

1. Record Nr.	UNINA9910620200803321
Titolo	Artificial intelligence in PET/CT oncologic imaging // edited by John A. Andreou, Paris A. Kosmidis, and Athanasios D. Gouliamos
Pubbl/distr/stampa	Cham, Switzerland : , : Springer, , [2022] ©2022
ISBN	3-031-10090-5
Descrizione fisica	1 online resource (156 pages)
Disciplina	610.285
Soggetti	Tomography, Emission Artificial intelligence - Medical applications Processament de dades Tomografia Intel·ligència artificial en medicina Llibres electrònics
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Intro -- Foreword -- Preface -- Acknowledgements -- Contents -- 1: Introduction: Artificial Intelligence (AI) Systems for Oncology -- 1.1 Introduction -- 1.2 Applications -- 1.3 Challenges -- References -- 2: Positron Emission Tomography in Bone and Soft Tissue Tumors -- 2.1 Introduction -- 2.2 Positron Emission Tomography in Sarcomas -- 2.3 Positron Emission Tomography in Gastrointestinal Stromal Tumors -- 2.4 Artificial Intelligence -- 2.5 Conclusion -- References -- 3: PET/CT in Brain Tumors: Current Artificial Intelligence Applications -- 3.1 Introduction -- 3.2 Radiopharmaceuticals -- 3.3 Radiomics in the Study of Brain Malignancies -- 3.4 Identification of Brain Tumors, Molecular Markers, Grading and Prognosis -- 3.4.1 FDG PET -- 3.4.2 MET PET -- 3.4.3 FDOPA PET -- 3.4.4 FET PET -- 3.4.5 FLT PET and Other Tracers -- 3.5 Biopsy Guiding -- 3.6 Radiation Therapy Planning -- 3.7 Treatment Monitoring -- 3.8 Role of PET/CT in Brain Metastases -- References -- 4: Artificial Intelligence in Head and Neck Cancer Patients -- 4.1 Introduction -- 4.2 Artificial Intelligence: Performing Tasks Requiring Human Intelligence -- 4.3 Artificial

Intelligence in Medicine -- 4.4 Artificial Intelligence in Oncology: Head and Neck Cancer -- 4.5 Conclusions -- References -- 5: PET-CT in Lung Cancer -- References -- 6: Breast Cancer: PET/CT Imaging -- References -- 7: PET/CT in Gynecologic Cancer -- 7.1 PET/CT with [18F]FDG in Cervical Cancer -- 7.1.1 Initial Diagnosis and Prognosis -- 7.1.2 Initial Staging -- 7.1.3 Radiotherapy Planning -- 7.1.4 Restaging after Treatment -- 7.1.5 Tumor Recurrence -- 7.1.6 Conclusion -- 7.2 PET/CT with [18F]FDG in Endometrial Cancer -- 7.2.1 Initial Diagnosis and Prognosis -- 7.2.2 Initial Staging -- 7.2.3 Tumor Recurrence -- 7.2.4 Conclusion -- 7.3 PET/CT with [18F]FDG in Ovarian Cancer.

7.3.1 Initial Diagnosis: Differentiation Between Malignant and Benign Ovarian Tumors and Prognosis -- 7.3.2 Initial Staging -- 7.3.3 Radiotherapy Planning -- 7.3.4 Restaging After Treatment -- 7.3.5 Tumor Recurrence -- 7.3.6 Conclusion -- References -- 8: PET-CT Staging of Rectal Carcinoma -- 8.1 Introduction -- 8.2 Diagnosis and Initial Staging -- 8.3 Detection and Staging of Recurrent Disease -- 8.4 Monitoring Treatment Response and Planning of Radiation Therapy -- 8.5 PET/CT Radiomics in Rectal Cancer -- 8.6 Conclusions -- References -- 9: Advances in Neuroendocrine Tumor Imaging, Including PET and Artificial Intelligence (AI) -- 9.1 Introduction -- 9.2 SSTR-Based Imaging -- 9.3 Ga-68 SSTR-vs. F18-FDG -- 9.4 Theragnostics in Neuroendocrine Tumors -- 9.5 Tentative Approach to AI in PET/CT Regarding Neuroendocrine Tumors -- References -- 10: PET/CT in the Evaluation of Adrenal Gland Mass -- 10.1 Introduction -- 10.2 PET/CT in Evaluation of Adrenal Masses in Cancer and Noncancer Patients -- 10.3 PET/CT in Primary Tumors' Evaluation -- 10.4 Towards Artificial Intelligence -- 10.5 Conclusion -- References -- 11: PET/CT in Renal Cancer -- 11.1 Introduction -- 11.2 18F-FDG-PET for Renal Cancer Investigation -- 11.2.1 Renal Mass Characterization and Initial Staging -- 11.2.2 Relapse and Evaluation of Treatment Response -- 11.3 Non-FDG Radiopharmaceutical for RCC Imaging -- 11.4 Towards Artificial Intelligence -- References -- 12: PET/CT Findings in Testicular Cancer -- 12.1 Initial Staging: Early Detection of Micrometastases -- 12.2 Response to Treatment Assessment: Residual Mass Characterization -- 12.3 Seminomatous GCTs -- 12.4 Nonseminomatous Germ Cell Tumors -- References -- 13: PET/CT in Prostate Cancer -- 13.1 Introduction -- 13.2 Imaging of Prostate Cancer with PET/CT.

13.3 Artificial Intelligence in the Service of Prostate Cancer Patients -- References -- 14: The Role of 18FDG-PET/CT in Malignant Lymphomas Clinical Implications -- 14.1 Introduction -- 14.2 PET/CT in Initial Staging -- 14.2.1 Role of PET in the Initial Staging of Lymphomas -- 14.2.2 PET in the Assessment of Bone Marrow Involvement -- 14.2.2.1 Hodgkin Lymphoma -- 14.2.2.2 Diffuse Large B Cell and Primary Mediastinal Large B Cell Lymphoma [24-33] -- 14.2.2.3 Other Lymphoma Subtypes -- 14.2.3 Potential Prognostic Impact of Baseline PET Parameters -- 14.3 PET/CT in Response Assessment After Completion of Therapy -- 14.3.1 Criteria for Response Assessment and Definitions of PET Positivity -- 14.3.2 Who Should Have an EOT-PET-Based Response Assessment and When? -- 14.3.3 Clinical Data in Individual Lymphoma Subtypes -- 14.3.3.1 Hodgkin Lymphoma -- 14.3.3.2 Primary Mediastinal Large B Cell Lymphoma -- 14.3.3.3 Diffuse Large B Cell Lymphoma -- 14.3.3.4 Follicular Lymphoma -- 14.3.3.5 Mantle Cell Lymphoma -- 14.3.3.6 T Cell Lymphomas -- 14.4 Interim Response Assessment -- 14.4.1 Who Might Benefit from Interim PET-Based Early Response Assessment? -- 14.4.2 Clinical Data in Individual Lymphoma Subtypes -- 14.4.2.1 Hodgkin

Lymphoma -- 14.4.3 Is It Reasonable to Modify Treatment of HL in Response to Interim PET Results? -- 14.4.3.1 Diffuse Large B Cell Lymphoma -- 14.4.3.2 Primary Mediastinal Large B Cell Lymphoma -- 14.4.3.3 T Cell Lymphomas -- 14.5 Impact of Interim and EOT-PET on Clinical Practice: Randomized Trials -- 14.5.1 Hodgkin Lymphoma -- 14.5.1.1 Radiotherapy Questions -- 14.5.2 Chemotherapy Questions -- 14.5.3 Aggressive B Cell Lymphomas -- 14.5.3.1 Radiotherapy Questions -- 14.5.3.2 Chemotherapy Questions -- 14.6 PET in the Setting of Autologous Stem Cell Transplantation (ASCT). 14.7 PET in the Era of Novel Agents -- 14.7.1 Programmed Death-1 (PD-1) Inhibitors -- 14.7.2 Chimeric Antigen Receptor (CAR) T cells -- 14.8 Artificial Intelligence in F-FDG-PET/CT Scan -- 14.9 The Role of PET/CT in the Follow-Up of Lymphomas -- 14.10 Conclusions -- References.

---