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A shifting landscape: What will be next FDG in PET oncology?

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The tumor-seeking agent most widely used in positron emission tomography (PET) is 2-^{18}F-fluoro-deoxy-D-glucose (FDG). The clinical usefulness of FDG PET has already been proved in detecting, staging and restaging various kinds of malignant tumors, but nuclear medicine physicians suffer from a "diagnostic dilemma," in which a relatively high false positive ratio of FDG PET in diagnosing malignant tumors prevails. To increase more specific tumor uptake or more specific tumor characterization, numerous PET radiopharmaceuticals have been developed, and some of them are being tested in clinical trials. This review will briefly survey the tumor uptake mechanism and clinical significance of representative non-FDG PET radiopharmaceuticals used in clinical trials for patients with cancers.

Key words: FDG, PET, PET oncology