

**P0686 Diagnosis contribution of 18F-FDG PET in the management of fever and inflammatory syndrome of unknown origin: a prospective study in 39 patients at Grenoble Alpes University Hospital**

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**Background:** Fever and inflammation of unknown origin (FUO and IUO) are frequent clinical presentations in infectious diseases departments. Our aim was to study prevalence of FUO, IUO and their etiologies, and evaluate diagnosis contribution of complementary examinations, mainly 18F-FDG-PET (positron-emission tomography).

**Materials/methods:** We conducted a monocentric prospective study in a French university hospital between December 2015 and November 2018. Fever > 38,3°C or C-reactive Protein level > 5mg/L for more than a week, without diagnosis after minimal investigations defined FUO/IUO. The different causes were listed as infectious diseases, noninfectious inflammatory diseases (NIID), neoplasms, miscellaneous diseases and undiagnosed. Diagnostic features of 18F-FDG- PET were studied.

**Results:** Thirty-nine patients were included, respectively 32 FUO and 7 IUO. A diagnosis was made possible in 67% cases, mainly NIID (50%) and neoplasms (31%), then infectious diseases (15%) and miscellaneous diseases (4%). Most exams, such as laboratory tests or imaging techniques were mildly helpful for diagnosis. 18F-FDG- PET was performed in 82% of patients, and helpful for final diagnosis in 47% of cases. Diagnostic performances of 18F-FDG- PET were excellent in case there was no clinical clue (sensitivity 86% and negative predictive value 90%). Thirty-two patients received a treatment, linked with the causal disease in 64% of cases. Six patients (15%) died during follow up. Death was always related to the causal disease. None of the undiagnosed patients died.

**Conclusions:** Complete and repeated physical examination helps guide diagnostic approach of FUO and IUO. Without these clinical clues, 18F-FDG- PET has a major place to help with final diagnosis and to exclude a potential severe disease if normal.

