P2383 Impact of 18F-FDG-PET/CT on the management of Staphylococcus aureus bacteraemia: a retrospective observational study

Paula Suanzes Diez1, Nuria Fernandez-Hidalgo1, Rein Willekens Morales1, Mireia Puig-Asensio1,2, María Nazarena Pizzi3, Albert Roque4, Marc Simó5, Marta Barios5, Laura Escolà-Vergé1, Dolores Rodríguez-Pardo1, Carles Pigrau1, Nieves Larrosa6, Benito Almirante1

1 Infectious Diseases Department, Hospital Universitari Vall d’Hebron, Barcelona, Spain, 2 Division of Infectious Diseases, University of Iowa Hospitals & Clinics, Iowa City, IA, US, 3 Cardiology Department, Hospital Universitari Vall d’Hebron, Barcelona, Spain, 4 Radiology Department, Hospital Universitari Vall d’Hebron, Barcelona, Spain, 5 Nuclear Medicine Department, Hospital Universitari Vall d’Hebron, Barcelona, Spain, 6 Microbiology Department, Hospital Universitari Vall d’Hebron, Barcelona, Spain

Background: Detection of infectious foci and early source control are essential in the management of Staphylococcus aureus bacteraemia (SAB). The aim of this study was to assess the impact of 18-Fluorodeoxyglucose positron emission tomography/computerized tomography (18F-FDG-PET/CT) on the diagnosis and management of patients with SAB.

Materials/methods: We performed a retrospective analysis of a prospective cohort of consecutive patients diagnosed with SAB between January-2013 and December-2017. We included patients who underwent 18F-FDG-PET/CT at the discretion of the attending physician. Endpoints were the identification of previously unknown infectious foci and changes in clinical management, defined as changes in the duration or class of antibiotic treatment, surgical procedure on the source of infection or implantable device removal or retaining.

Results: We identified 36 patients (median age: 69 years, IQR 60.5-80.5). In 10 (28%) patients SAB was due to methicillin-resistant strains, in 18 (50%) portal of entry was unknown and 28 (78%) were community-acquired bacteremias. Twenty-four (67%) patients had implantable devices (15 endovascular devices, 8 prosthetic heart valves and 7 osteosynthesis). Nineteen (53%) patients had persistent bacteremia and 14 (39%) did not have an infectious focus identified before 18F-FDG-PET/CT. Median time from diagnosis to 18F-FDG-PET/CT was 11 days (IQR 7-18.25). Overall, 29 new infectious foci were detected in 21 patients, mainly endovascular (9), spondylodiscitis (7) and pulmonary (5). In 11/14 (79%) patients without an identified focus and 12/19 (63%) patients with persistent bacteremia at least one infectious focus was detected by 18F-FDG-PET/CT. Ten of 13 device infections were detected by 18F-FDG-PET/CT, 7 of which were identified for the first time by 18F-FDG-PET/CT (4 endovascular devices, 2 prosthetic heart valves). In 19 patients (53%) 18F-FDG-PET/CT results led to adjustments in clinical management (15 changes in antibiotic therapy, 3 implantable device removals and 2 surgical procedures).

Conclusions: 18F-FDG-PET/CT is a useful asset in the management of SAB since it can identify previously undetected infectious foci and allow for optimization of therapy, particularly in patients with endovascular devices. Indication should be made on a case-by-case basis.