

Cod: PO194

## **THE BEST WAY FOR GLYCAEMIA MEASUREMENT IN PATIENTS UNDERGOING 18F FLUORODEOXYGLUCOSE (FDG) POSITRON EMISSION TOMOGRAPHY (PET)/COMPUTED TOMOGRAPHY (CT)**

E. Carpin<sup>1</sup>, M. Trevisan<sup>1</sup>, A. Biscotto<sup>1</sup>, F. Lincetto<sup>1</sup>, G. Saladini<sup>1</sup>, L. Evangelista<sup>1</sup>

<sup>1</sup>*Radiotherapy and Nuclear Medicine Unit, Oncological Institute of Veneto IOV - IRCCS, Padua, Italy*

### **BACKGROUND-AIM**

As suggested by European and American guidelines (available from the links: [www.eanm.org](http://www.eanm.org) and [www.snmmi.org](http://www.snmmi.org); respectively), the blood level glucose should be checked before 18F-FDG administration, because tumour FDG-uptake is reduced by hyperglycaemic states. European guidelines reports that a glucometer or a similar bedside device should be used for this purpose. The aim of our study was to assess the difference in blood glucose levels between two methods of glycaemia measurement, it means capillary vs. venous in a subset of oncological patients performing PET/CT examination.

### **METHODS**

We prospectively evaluated 103 patients who underwent FDG PET/CT for the evaluation of oncological status. We performed a double check of capillary and venous blood glucose levels by using a dedicated stick that was calibrated and validated with a control solution (three times per week). The continuous data were compared by parametric tests (paired and un-paired t-Student test). The p value <0.05 was considered statistically significant.

### **RESULTS**

Out of 103 patients, 10 were diabetic and 93 were non-diabetic. The capillary blood glucose levels were significantly lower than venous values ( $102.61 \pm 22.59$  vs.  $110.92 \pm 24.57$ ;  $p=0.0001$ ). In particular, the difference resulted statically different between diabetic and non-diabetic patients, being  $144.50 \pm 31.89$  vs.  $159.20 \pm 39.1$  and  $98.11 \pm 15.97$  vs.  $105.73 \pm 15.45$ , respectively (both  $p<0.05$ ). The percentage of variability between venous and capillary blood glucose levels was similar between diabetic and non-diabetic subjects ( $p=0.662$ ).

### **CONCLUSION**

The venous and capillary blood glucose levels are different from each others, although similar for diabetic and non-diabetic patients. Therefore, in patients who perform FDG PET/CT examination, a preferential way of blood glucose level measurement should be established, because they are not interchangeable.