“Wispino” protocol for ^{18}F FDG-PET scanning of myocardium

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Dear Sir,

Myocardial glucose kinetics is related with feeding state, insulin and free fatty acid levels and heart work [1, 2]. In the fasted state, the use of glucose accounts for approximately 30%, lactate for approximately 10% and free fatty acids for approximately 60–70% of the oxygen uptake of the myocardium. Conversely, after a high-carbohydrate meal when insulin concentrations are increased, the use of glucose accounts for approximately 70% and lactate for approximately 30% of the oxygen uptake of the myocardium [2]. Correspondingly, after carbohydrate load either orally or by means of glucose/insulin infusion, ^{18}F FDG should be taken up avidly by the myocardium.

For ^{18}F FDG-PET imaging of myocardium, there are standard protocols which are more or less time consuming. In general, the patient should be in a fasting state and then receive a glucose load to stimulate the insulin secretion. Insulin application can be necessary in patients with very high glycaemia.

In our department, we observed that many patients who were referred for oncologic PET studies often showed a high myocardial ^{18}F FDG uptake despite their fasting condition. To evaluate the possible effect of diet on this occurrence, we asked every patient about the dietary intake of

the meal in the evening before the ^{18}F FDG-PET investigation. Interestingly, we found that patients who had a high myocardial ^{18}F FDG uptake had ingested a carbohydrate-rich meal in the evening.

Based on this matter, we developed a new protocol named “Wispino” for our myocardium ^{18}F FDG-PET investigations. Wispino is the name of a popular menu in our hospital containing a big portion of potatoes, thus a high amount of carbohydrates. The patients are advised to have a meal with high-carbohydrate content the evening before the ^{18}F FDG-PET study and a piece of bread with jam approximately 2 h before the investigation. This protocol is less time consuming, more convenient for the patients and has been successfully used to increase myocardial ^{18}F FDG uptake in non-diabetic patients in our institution.

References

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