**Oncology F18-FDG PET CT Preparation and Scanning Protocol**

**Patient Preparation**

1. Patient Fasting:

- Patients should fast for at least 4-6 hours before the scan.

- Patients are allowed to drink water during the fasting period.

- Diabetic patients should continue their regular medication.

- Pre-scan glucose check. Desired blood glucose level: <150 mg/dL, with blood glucose not to exceed 200 mg/dL

2. Hydration:

- Drink 500-1000 mL of water 1-2 hours before the scan.

3. Medication:

- Patients should continue their scheduled regular medications unless otherwise instructed by referring physician.

4. Voiding:

- Patient should void immediately before the scan.

**Radiopharmaceutical Administration**

Radiopharmaceutical: 18F-FDG

2. Dose and Administration:

- Typically, 3-5 MBq/kg (0.08-0.15 mCi/kg) of body weight intravenously.

- Record injection time.

3. Uptake Period:

- Patient to rest for 60-90 minutes post tracer injection.

**PET/CT Scan Technique**

1. Patient Positioning:

- Supine, arms up.

2. Scan Coverage:

- Skull-base to mid-thigh.

3. CT Acquisition:

* Non-contrast, axial 3 mm low dose attenuation correction CT. This scan is not of diagnostic quality and is performed merely for attenuation correction.

CT parameters:

Slice thickness: 3mm

Tube voltage: 120-140 kVp

Tube current: 30-80 mA

4. PET Acquisition:

3D mode, 2–3-minute scan time/bed position.

5. Image Reconstruction:

* Ax PT non-attenuation corrected (NAC).
* Ax PT (AC)
* Cor PT (NAC)
* Cor PT (AC)
* Rotating 3D PT MIP
* Ax, Sag, & Cor Fused images.

**For patients with blood glucose >200 mg/dL (11.1 mmol/L)**

1. Blood Glucose Monitoring:

- Confirm the elevated blood glucose level using a point-of-care glucose meter.

- Document the blood glucose value and the time of measurement.

2. Hydration and Insulin Administration:

- Intravenous (IV) fluids, such as normal saline, to help dilute the blood glucose and promote diuresis.

- If the patient is diabetic, consider administering a short-acting insulin (regular insulin).

- Monitor blood glucose levels every 30-60 minutes.

3. Delaying the PET/CT scan:

- Delay the PET/CT scan until the blood glucose level is below 200 mg/dL (11.1 mmol/L).

4. Rescheduling the Scan:

- If the patient's blood glucose level does not decrease to the desired range within a reasonable time (e.g., 1-2 hours), the PET/CT scan may need to be rescheduled.

- The referring physician should be consulted to determine the appropriate course of action, which may include:

- Adjusting the patient's diabetic medication regimen before the next scheduled scan

- Considering alternative imaging modalities, if clinically appropriate

5. Acquisition and Reconstruction:

- If the patient's blood glucose level is successfully lowered to the desired range (<200 mg/dL), then proceed with scanning per standard acquisition protocol.