

### Abstract Title

## **Diagnostic performance of 18F-FDG PET/CT versus contrast enhanced CT in the post-treatment surveillance of malignant ovarian tumors**

### Authors and Institutions

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### ABSTRACT

**Objectives:** To evaluate the diagnostic performance of 18F-FDG PET/CT in comparison with contrast enhanced CT alone in the detection of residual tumor or recurrence after initial treatment of malignant ovarian tumors.

**Methods:** The study prospectively recruited 111 patients with clinical suspicion of ovarian tumor recurrence. Each patient underwent <sup>18</sup>F-FDG PET/CT and Ce-CT scans in the same day. Study-based analyses for a total of 136 scans were evaluated. Studies were read independently by one experienced nuclear medicine physician and one experienced radiologist. For each study, 11 sub-sites were assessed on a four-point score (score 0 = definitely benign, score 1 = probably benign, score 2 = probably malignant and score 3 = definitely malignant). The sub-sites assessed were: local tumor site, peritoneum, pelvic LNs, abdominal LNs, mediastinal LNs, cervical LNs, liver, lung, bone, brain and other sites (pleura, muscles, adrenal glands, umbilical nodules). The final diagnosis of disease status was made on the basis of subsequent follow-up by conventional imaging (CT/MRI), <sup>18</sup>F-FDG PET/CT or histopathology whenever possible.

**Results:** Of the 136 studies evaluated, 97 (71%) studies had recurrent/residual disease and 39 (29%) studies were disease free based on final diagnosis.

<sup>18</sup>F-FDG PET/CT & Ce-CT had sensitivity, specificity, negative predictive value, positive predictive value, and accuracy of 96% vs 84%, 92% vs 59%, 90% vs 59%, 97% vs 84% and 95% vs 76%; respectively. <sup>18</sup>F-FDG PET/CT was significantly more sensitive, specific and accurate compared to Ce-CT with *P*-value of 0.002, 0.001 and <0.0001; respectively.

**Conclusions:** <sup>18</sup>F-FDG PET/CT significantly outperforms Ce-CT in the post-treatment surveillance of malignant ovarian tumors.