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| **PET/CT improves lung nodule biopsy management and reduces biopsy number** |
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| **Introduction/Aim:** FDG PET/CT may have a role in guiding decisions for biopsy of lung nodules. This study aimed to assess the role of timing PET/CT to occur before any lung nodule biopsy.  **Methods:** A prospective study was performed in 2 large tertiary hospitals. A study multidisciplinary team (MDT) was established, (independent of the hospital Tumour Board), to review referrals of lung nodules with an intermediate (≥ 10%) risk of malignancy by Brock risk calculation. A two-stage consensus assessment was undertaken by the MDT regarding choice of biopsy: (1) first based on the referral CT, then (2) after unblinding the PET/CT in the same sitting. The primary outcome was change in biopsy decision. Data was compared to a retrospective cohort where lung nodules were managed without MDT PET/CT guidance. Patients going direct to surgery had Herder risk calculation as post hoc analysis.  **Results:** 168 patients were included; 53% of nodules were malignant, 44% were benign and 3% refused follow-up. 60 patients (36%) had a change in their initial biopsy recommendation. Regarding whether to biopsy the nodule or not, 42 cases (25%) had a change of biopsy decision (P <0.01). The estimated total cost reduction by biopsy avoidance was 62,306 AUD (370 AUD per patient). Comparing the prospective cohort to the retrospective group of 132 patients without the study intervention, the overall rate of biopsy was lower (68% vs 98%, p<0.0001), and the direct-to-surgery rate was higher (13.7% vs 3.8% P=0.01). For direct-to-surgery cases, a post-hoc Herder risk of cancer likelihood calculation showed a mean (SD) of 83.7% ±15.7. Half of the cases had risk prediction of > 90%.    **Conclusion:** In patients with suspicious lung nodule(s) of moderate risk of malignancy, FDG PET/CT reviewed in a multidisciplinary setting *before* any biopsyimproves nodule biopsy decision making and reduces overall number of biopsies.  **Grant Support: Nil** |