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Referral Patterns and Diagnostic Yield of Lung Scintigraphy (V/Q) in the Diagnosis of Acute Pulmonary Embolism (PE)

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Objective: To assess referral patterns and yield of V/Q in patients referred for acute PE.

Methods: Retrospective review of electronic charts of all V/Q patients studied between April 1, 2008 and March 31, 2010.

Results: 1,008 patients underwent V/Q to exclude acute PE. Number of Emergency Department (ED), hospital in-patient ward (INPT), outpatient thrombosis clinic (TCLINIC), and all other outpatient sources (OUTPT) studies were 43 (4.3%), 288 (28.6%), 351 (34.8%) and 326 (32.3%). Proportion of patients with contrast contraindications varied significantly, lower in the TCLINIC compared to all other groups. Of the 1,008 studies, 331 (32.8%) were interpreted as normal, 408 (40.5%) as low, 158 (15.7%) as intermediate, and 111 (11.0%) as high probability. 68 (6.7%) patients underwent CTPA within 2 weeks following scintigraphy ranging from less than 1% in patients with normal scans to 21.5% in patients with intermediate probability scans. Proportion of normal studies was greater in pregnant versus all other patients ($p < 0.0001$) and prevalence of chronic lung disease ($p = 0.012$), chronic renal failure ($p < 0.0001$), and chronic heart failure ($p = 0.0063$) were statistically lower compared to non-pregnant patients. 98 patients (9.7%) overall had history of chronic lung disease. The proportion of intermediate V/Q results was greater in these patients compared to all others (26.5% vs 14.5%, $p = 0.0019$).

Conclusion: Our non-diagnostic study rate is lower than that previously reported, with a relatively high rate of high and a low rate of intermediate probability studies. Only a small fraction of patients undergoing V/Q will require CTPA to complete their investigation.