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IC002

Interventional Cardiology & Catheterization • Poster Presentation

CORRELATION BETWEEN INVASIVE AND NON-INVASIVE PULMONARY PRESSURE ASSESSMENT IN LAGOS STATE UNIVERSITY TEACHING HOSPITAL

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Background: Pulmonary hypertension (PH) is associated with substantial morbidity and mortality. Although right heart catheterization (RHC) remains the gold standard for diagnosing PH, it is invasive and often unavailable in resource-limited settings. Echocardiography is widely used for non-invasive assessment, but its diagnostic performance relative to RHC has not been adequately validated in this setting.

Methodology: In this prospective cross-sectional study, 102 patients with suspected PH were recruited. Participants underwent transthoracic echocardiography followed by RHC within one hour. PH was defined as a mean pulmonary arterial pressure >25 mmHg on RHC. Correlation and diagnostic accuracy analyses were performed.

Results: Seventy-one participants completed both investigations. PH was identified in 48 (67.6%) participants by echocardiography and 39 (54.9%) by RHC. Echocardiographic pulmonary artery systolic pressure demonstrated a moderate positive correlation with invasive measurements ($r = 0.635$, $p<0.001$). Mean pulmonary artery pressure estimated using the Chemla and Syyed formulae showed the strongest correlation with invasive measurements (both $r = 0.650$, $p<0.001$), while pulmonary acceleration time-derived estimates demonstrated a weaker correlation ($r = 0.473$, $p<0.001$). Echocardiographic PASP demonstrated a sensitivity of 86.9%, specificity of 52.0%, positive predictive value of 76.9%, and negative predictive value of 68.4%.

Conclusions: Echocardiographic estimation of pulmonary arterial pressure demonstrated moderate agreement with invasive measurements and high sensitivity for detecting PH. While echocardiography is a valuable screening tool, RHC remains essential for definitive diagnosis.

Keywords: Echocardiography, non-invasive assessment, pulmonary arterial pressure, pulmonary hypertension, right heart catheterization.