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Early Post-PCI Ankle-Brachial Index and Clinical Outcomes in STEMI: Subgroup
Analysis by Vascular Access

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Purpose: The ankle-brachial index (ABI) is a non-invasive marker of peripheral arterial disease and systemic atherosclerosis. Its role in early risk stratification after primary percutaneous coronary intervention (PCI) in ST-elevation myocardial infarction (STEMI) remains unclear. We evaluated the association between early post-PCI ABI and clinical outcomes and assessed whether its prognostic value differs by vascular access. **Methods:** This retrospective cohort study included consecutive STEMI patients undergoing primary PCI at the Central Chest Institute of Thailand between January 2020 and December 2024. ABI was measured within 1 to 3 days after PCI and categorized as normal (0.90 to 1.40), low (below 0.90), or high (above 1.40). Baseline characteristics and outcomes including 12-month major adverse cardiovascular events (MACE) and all-cause mortality were analyzed. Subgroup analysis was performed by vascular access (radial vs femoral). **Results:** Among 1,128 patients (mean age 60.2 +/- 12.3 years; 78.2 percent male), 14.2 percent had low ABI. Abnormal ABI was associated with older age and higher cardiovascular risk burden. Left ventricular function and angiographic severity were similar across groups. Abnormal ABI showed a graded association with 12-month MACE and mortality (p for trend 0.001). This association was consistent across radial and femoral access without significant interaction. **Conclusion:** Early post-PCI ABI identifies high-risk STEMI patients and provides prognostic value independent of vascular access, supporting its use in routine post-PCI risk stratification.