Biphasic CT Angiography for Acute Mesenteric Ischemia in the Emergency Department: Is it Too Much?

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Purpose: This study evaluates whether portal venous (PV) phase abdominopelvic computed tomography (CT) alone is sufficient to diagnose acute mesenteric ischemia (AMI) in the emergency department, potentially reducing unnecessary multiphasic CT angiography (CTA) use.

Materials & Methods: A retrospective review of 100 biphasic CTAs assessed diagnostic performance, image counts, and radiation doses, comparing PV-only findings to arterial phase in confirmed AMI cases.

Results: PV phase alone identified all bowel-related findings and 82% of arterial findings in AMI-positive studies, while significantly reducing image count and radiation exposure.

Discussion: Given low AMI prevalence and high PV-phase diagnostic yield, routine PV-phase CT may suffice for initial evaluation, reserving biphasic CTA for follow-up when clinical suspicion remains high.

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Portal venous phase CT alone is highly effective in detecting acute mesenteric ischemia (AMI) in the emergent setting and ***serves as sufficient first-line imaging in the work-up of AMI***, reducing radiation and resource use relative to multiphasic CTA.



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