

Utility of Cardiac POCUS in the Evaluation of Pediatric Chest Pain in the Emergency Department

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Background/Objective:

Chest pain in children is rarely caused by a life-threatening pathology. Despite the rarity of potentially life-threatening disease, most children presenting to EDs are evaluated with chest radiographs and laboratory tests without yielding helpful information that significantly changes immediate management. While the utilization of cardiac Point-of-Care Ultrasound (POCUS) by adult emergency physicians has become standard of practice, the data in pediatric emergency departments (PED) is not as robust. This study aims to describe practice patterns in the evaluation of pediatric chest pain presenting in a PED and determine clinical outcomes.

Methods:

We reviewed charts of previously healthy children aged <18 years old who presented to Riley Children's Hospital from January 2019 to July 2020 with a chief complaint of chest pain. Patients with known medical history, prior evaluations by a pediatric cardiologist, transfers from other hospital with existing workup were excluded. Patient demographics, laboratory tests and imaging ordered while in the ED, electrocardiography (EKG), consults with subspecialties, disposition and follow up plans were analyzed. We categorized clinical significance of PED interventions as minor, moderate, or major.

Results:

Out of three hundred and nineteen patients included in the study, 79.6% (254) received chest radiographs, 93.4% (298) underwent EKG, and 4.1% (13) received cardiac POCUS. The findings of these orders prompted minor interventions in 92.8% (296) of patients, moderate intervention in 4.7% (15) of patients, and major intervention in 2.5% (8) of patients.

Conclusion and Implications:

These results show a lack of use for POCUS in pediatric patients presenting with chest pain while chest radiography is preferred in the ED. Additionally, POCUS did not result in any moderate or major significant clinical outcomes.