

Impact of an emergency-department acute-pancreatitis admission protocol on CT use and length of stay: a retrospective pre–post cohort study

Mostafa Alhabboubi¹, Laurie Robichaud², Seth Davis³, Paul Brisebois², Jerome Williams, Shannon Fraser⁴, Alex Guttman², Xiaoqing Xue², Marc Afilalo², Eli Segal^{2*}

1. Department of Family Medicine, Subsection of Emergency Medicine, Faculty of Medicine, University of Jeddah, Jeddah, Saudi Arabia

2. Department of Emergency Medicine, Jewish General Hospital, Montreal, QC

3. Department of Emergency Medicine, McGill University, Montreal, QC

4. Department of General Surgery, Jewish General Hospital, Montreal, QC

Correspondence to: Eli Segal

*Department of Emergency Medicine, Jewish General Hospital, Montreal, QC, Canada.

Email: eli.segal@mcgill.ca

DOI: 10.24911/SJEMed.12-2631

Background: Early abdominal CT is often performed for acute pancreatitis (AP) in the emergency department (ED), despite guidelines recommending delayed imaging unless diagnosis is uncertain or deterioration occurs after 48–72 hours. Excess imaging may prolong ED length of stay (LOS) without improving outcomes. We evaluated whether implementing an ED admission protocol for AP reduced CT use and ED LOS.

Methods: We conducted a retrospective pre–post study at a university-affiliated ED. Adults with AP were included from two periods: pre-protocol (February 2019–February 2021) and post-protocol (April 2021–January 2023). Primary outcomes were proportion receiving CT before admission and ED LOS. Secondary outcomes included CT ordering service, ultrasound use, complications, and mortality.

Results: A total of 458 visits were analyzed (210 pre-, 248 post-protocol). Overall CT use was unchanged (88.57% vs 85.48%, $p = 0.40$). CTs ordered by ED clinicians decreased (97.85% to 91.9%; $p = 0.037$), while those by surgery increased (2.15% to 8.1%; $p = 0.037$). Mean ED LOS was similar (20.4 hours vs 21.3 hours; $p = 0.56$). Post-protocol, point-of-care ultrasound (PoCUS) use rose (48.1% to 53.23%) and gallstone detection improved (26.25% to 36.13%, $p = 0.001$). Complication rates (9.71% vs 8.65%) and mortality (2.29% vs 2.88%) were unchanged. Only 11.1% of CTs revealed any abnormality, and 5.9% were pancreas-specific.

Conclusions: A standardized protocol did not significantly reduce CT use or ED LOS but shifted ordering patterns and increased PoCUS utilization. Future work should target predictors for early imaging and strategies to enhance protocol adherence.

Keywords: Acute pancreatitis, CT scan, Admission protocol, Point of Care Ultrasound.

List of abbreviation

AP	Acute pancreatitis
ED	Emergency department
CT	Computed tomography
LOS	Length of stay
PoCUS	Point-of-Care Ultrasound

Conflict of interests: The authors declare that there is no conflict of interest regarding the publication of this article.

Funding: None.

Consent for participate: The requirement for informed consent was waived by the Research Ethics Board due to the retrospective nature of the study and the use of anonymized data.

Consent for publication: N/A.

Ethical approval: The study protocol was approved by the CIUSSS West-Central Montreal REB office on 10-01-2022 under the number 2022-3072.