

Limiting use of enteric contrast for abdominal CT studies: Effect on median emergency department CT turnaround time and perceived exam quality

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Purpose

The purpose of our project is to determine whether median turnaround time (TAT) for emergency department computed tomography exams of the abdomen and/or pelvis (CTAP) can be shortened, without a coincident compromise with respect to perceived exam diagnostic quality, by not requiring the use of orally administered contrast material in certain patient groups undergoing CTAP.

Methods

In February 2010, after obtaining radiology department consensus, the decision was made to limit the use of oral contrast for ED CTAP exams, with 3 exceptions (studies performed to evaluate for appendicitis, for abscess, and in patients with a history of surgery in the past 14 days).

Study volume and median TAT for CTAP exams were collected for the 2 months prior to the date of the protocol change and for the 2 months following the date of the protocol change.

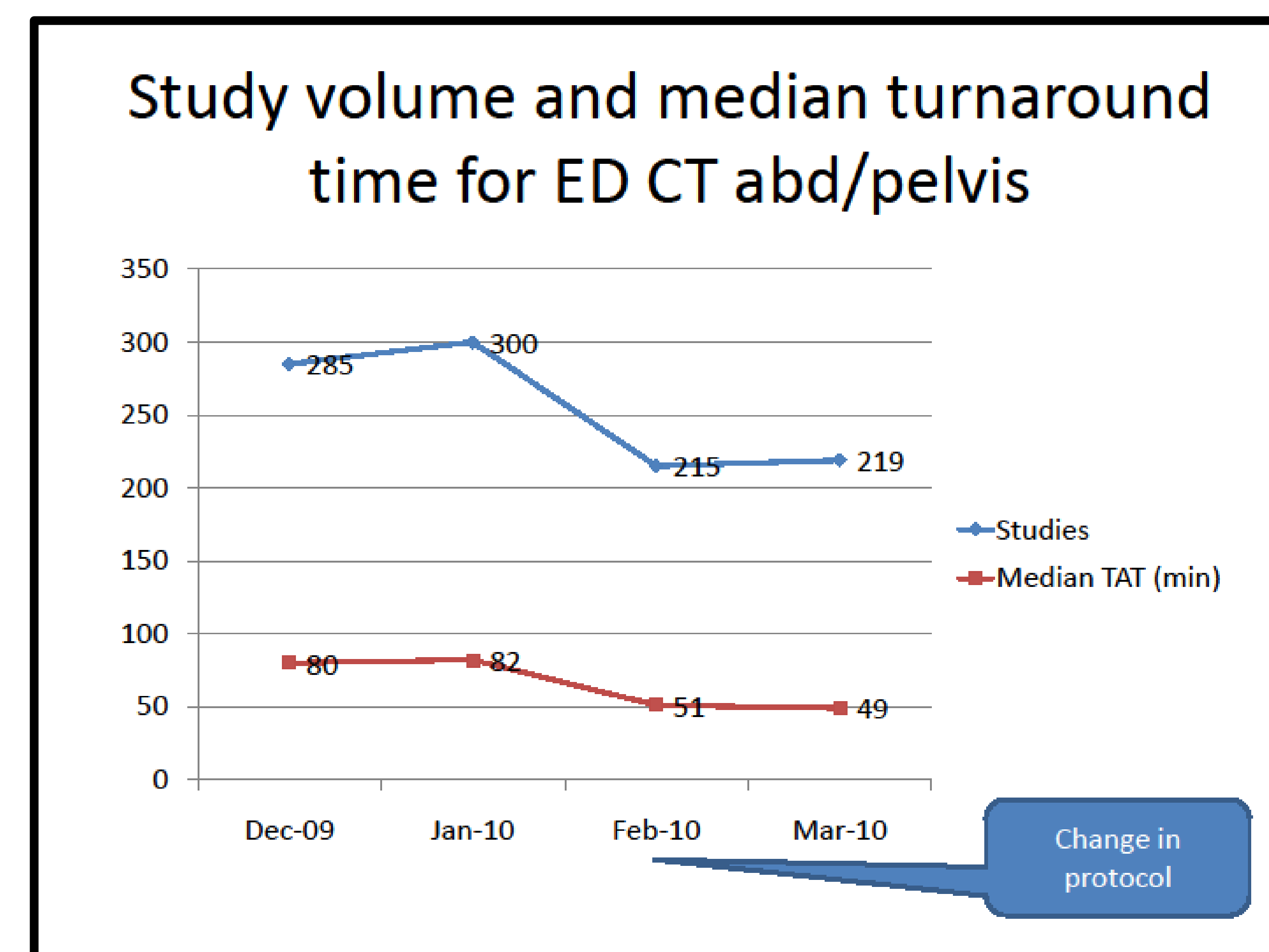
200 radiology reports from CTAP studies performed after the protocol change were reviewed to determine how frequently the interpreting radiologist recommended a repeat CTAP with enteric contrast be performed due to perceived limitations of the initial exam.

Results

1,502 total CTAP exams were performed over the 4 month assessment period. 848 exams were performed in December 2009 and January 2010, the 2 months prior to the protocol change. 654 exams were performed in February and March 2010, the 2 months following the protocol change.

Median TAT decreased from 81 minutes before the protocol change to 50 minutes after the protocol change. To adjust for differences in study volumes prior to and after the protocol change, a one-way ANOVA test was performed, with a calculated F ratio of 47.43 (p value = 0.0001).

2 of the 200 reviewed radiology reports (1%) were found to contain a recommendation for a repeat study.



Conclusions

The protocol change limiting the use of enteric contrast material in select emergency department patients based on the provided clinical history significantly decreased median ED CTAP turnaround time, independent of changes in study volume, during the assessment period.

A recommended repeat exam frequency of 1% following the protocol change suggests that limiting enteric contrast use did not adversely affect the radiologist perceived quality of ED CTAP exams performed without oral contrast in the vast majority of cases.

Subsequent to our assessment, we have continued to limit the use of enteric contrast for ED CTAP exams, and we are continuing to track median ED CTAP exam turnaround times.

References

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