Reviewer’s report

Title: CT Imaging History for Patients Presenting to the ED with Renal Colic–Evidence from a Multi-Hospital Database

Version: 0 Date: 21 Jul 2018

Reviewer: James Svenson

Reviewer's report:

I don't think the introduction makes the case for doing this study. I do not think they really emphasize the multihospital aspect and how this is different and more important than previous. Nor, do they really discuss the differences in scan rates across hospitals or patient flow between the hospitals.

Introduction:
The authors state that xray was the preferred imaging when in fact IVPs were utilized. Plain xrays are notoriously insensitive and difficult to read.

Methods:
This is not a prospective study. This is a retrospective study from a prospectively enrolled patient population.

The setting does not really describe the hospital system. What area do the six hospitals encompass. How many other hospitals and medical centers are there in the area that provide care.

The inclusion criteria seem rather narrow. What about people who are diagnosed with nephrolithiasis, or kidney stone, or ureteral colic. Are those all missed.

How far back did the chart reviews go. Just to where e records had been implemented or further?

Results:
Should have a patient flow chart. How many patients were screened. How many med inclusion criteria, included in final data, etc.

Table one doesn't add anything since all the data are summarized in the first paragraph.

One of the reasons for the study is to look at prior CT use across a system, but none of those data are really presented. How many patients with multiple scans were seen at multiple hospitals, how many seen at a single hospital.

Table 3 likewise adds nothing to what is summarized in the paragraph.
For those with negative CTs how was the diagnosis of renal colic made.

Table 4 95 had no prior CT scan. I think the authors need to distinguish those with prior history of stones and those without. Are these patients who had no CTs who had no prior history of kidney stones. Of the patients with no prior CT history did they all get CTs on their current visit, or was there a different distribution of US/CT.

You state that "Patients with a prior stone were more likely than those with no history to receive a CT" yet several places after say the opposite.

Discussion:
The discussion really doesn't highlight the results of this study until the end. The results should be emphasized first and their implications later.

The authors put a lot of results (with p values or CI) in the discussion. These should be discussed in the results section.

First paragraph might be nice to discuss the rates of alternative dx and whether they would be found with US. Some studies find as high as 6% with many not being considered.

Again, the authors emphasize the multi-hospital aspect of this study, but do not really explore this.

Why do the authors think that those with a prior history of stones were more likely to undergo a repeat scan. There is no discussion of this finding except to say it seems disturbing. Also it seems to contradict the fact that those with previous high number of CT had US. Why that discrepancy.

Also in the results section they state "Patients with a reported prior stone were more likely to receive a renal ultrasound as the only imaging study..." that seems contradictory.

References:
Seem relatively dated. I am sure there are newer studies that could be cited.

**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
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No

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I am able to assess the statistics

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