

# URGENT VERSUS NON-URGENT DIAGNOSES OF ABDOMINAL PAIN IN THE EMERGENCY DEPARTMENT

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## Background

- Abdominal Pain is the most common cause of visits to US Emergency Departments (EDs) and the causes range from urgent to non-urgent diagnoses.
- There are no validated clinical decision rules to assist physicians in discriminating urgent from non-urgent causes of abdominal pain or which patient needs a CT scan.
- There is controversy regarding the use of CT Scans for patients with abdominal pain due to the increased cost, radiation exposure and length of stay.

## Objective

- The objective of this study is to compare the demographics, pain score and CT Utilization for patients with urgent versus non urgent causes of abdominal pain.

## Reference

Laméris, W., van Randen, A., van Es, H. W., van Heesewijk, J. P. M., van Ramshorst, B., Bouma, W. H., ... Stoker, J. (2009). Imaging strategies for detection of urgent conditions in patients with acute abdominal pain: diagnostic accuracy study. *BMJ (Clinical Research Ed.)*, 338(jun26\_2), b2431. <http://doi.org/10.1136/bmj.b2431>

## Methods

- At an academic ED, a convenience sample of patients with acute abdominal pain were prospectively enrolled by research assistants (RA's) during the ED visit.
- Treatment information and outcomes were obtained by the RA's from the EMR and hospitalization records if applicable.
- Follow up phone calls, 2 weeks post initial ED visit to ascertain symptom resolution and treatment outcomes.
- Risk differences in pain severity, CT scan utilization and demographics were compared to the urgency of diagnosis.
- A paired t-test was used to estimate differences in initial clinical characteristics.

## Results

- 725 enrolled patients, 144 (20%) had urgent diagnoses and 561(80%) had non-urgent diagnoses.
- No significant differences were found in insurance type, income level, mean age or pain score between the two groups.
- No significant differences were found in pain medications given.
- CT scan utilization was higher in patients with urgent diagnoses

Pain Score (p > 0.05)	Urgent		Non-Urgent	
	Number	Percent	Number	Percent
Sample Size	144	100%	561	100%
Pain Scale (abstracted from EMR)				
0 to 3	4	2.8%	35	6.2%
4 to 6	32	22.2%	114	20.3%
7 to 8	36	25.0%	55	9.8%
9 to 10	44	30.6%	85	15.2%
Not provided	28	19.4%	272	48.5%
Average of provided	7.6		7.2	

## Results

Provider Ordered CT Scan (p>0.05)	Urgent		Non-Urgent	
	Number	Percent	Number	Percent
Sample size	144	100%	561	100%
Abd/pelvic CT scan	61	42.4%	92	16.4%

Demographics	Urgent		Non-Urgent	
	Number	Percent	Number	Percent
Sample size	144	100%	561	100%
Mean age	41.6		39.4	
Female	79	54.9%	375	66.8%
Race				
White	80	55.6%	152	27.1%
Black/AA	48	33.3%	343	61.1%
Other	15	10.4%	58	10.3%
Hispanic	8	5.6%	45	8.0%
Marital Status				
Married	47	32.6%	123	21.9%
W/D/S	96	66.7%	434	77.4%
Have insurance	131	91.0%	499	88.9%
HH Income				
< 13,000	21	14.6%	93	16.6%
13,000-49,999	32	22.2%	159	28.3%
50,000-99,999	31	21.5%	106	18.9%
100,000-149,999	40	27.8%	109	19.4%
DK/Refused	20	13.9%	90	16.0%

## Conclusions

- There was no difference in the pain score for patients with urgent versus non-urgent diagnosis.
- Higher CT scan utilization in patients with an urgent diagnosis suggests appropriate clinical judgment.
- Future studies will seek to target patients who are most likely to have an urgent diagnosis for testing.

## Limitations

- A potential limitation is provider work up bias where an increase in CT scans may lead to more urgent diagnoses.