

Ultrasound, followed by CT if negative, best for acute abdomen

Clinical question

In patients with nontraumatic acute abdominal pain, what is the best strategy for detecting urgent conditions?

Bottom line

Urgent conditions -- acute appendicitis, bowel obstruction, and so forth -- in patients with acute abdominal pain presenting to an emergency department are best ruled out by clinical examination and ultrasound of all patients, followed by computed tomography (CT) of those whose ultrasound is negative or inconclusive. Using this approach, 94% of urgent conditions will be correctly ruled out if the CT is negative, and it will avoid unnecessary cost and radiation in almost half the patients presenting with acute abdominal pain. Going straight to CT actually results in a lower sensitivity (89%). (LOE = 1c)

Reference

Lameris W, Van Randen A, van Es HW, et al, for the OPTIMA study group. Imaging strategies for detection of urgent conditions in patients with acute abdominal pain: diagnostic accuracy study. *BMJ* 2009;339:b2431.

Study Design

Cohort (prospective)

Funding

Government

Setting

Emergency department

Synopsis

These investigators enrolled 1021 patients with nontraumatic abdominal pain lasting 2 hours to 5 days who presented to 1 of 6 university emergency departments in the Netherlands. Pregnant women and patients in hemorrhagic shock or with a ruptured aortic aneurysm were excluded. The final diagnosis of an urgent condition -- acute appendicitis, diverticulitis, bowel obstruction, and so forth -- was present in 65% of the patients. After giving medical histories and undergoing physical examinations and laboratory studies, all patients received upright and supine abdominal plain x-rays, abdominal ultrasound, and CT. Interpretation of the ultrasound and CT were performed with a knowledge of the clinical information but without knowing the results of either of these tests (ie, physicians reading the CT were unaware of ultrasound findings, and vice versa). The gold standard used in this study was interpretation by an expert panel 6 months following presentation using follow-up data collected over that period. Sensitivity -- the ability to identify an urgent condition so as to rule it out if it is not present -- was high with clinical diagnosis (88%) and was not dramatically improved with plain radiographs (88%) or CT (89%) and was worsened, because of many false-positives, with ultrasound (70%). Specificity, the percentage of true-negatives, was low with clinical diagnosis (41%) and not improved with radiographs (43%) or ultrasound (70%). Combining these results, the best strategy for ruling out urgent conditions (highest sensitivity) is to perform an ultrasound in all patients and perform a CT if the ultrasound is negative or inconclusive (94%); this approach decreases CT use by almost half and is more effective than going straight to CT.

Progesterone ineffective to reduce preterm twin birth

Clinical question

Does supplemental progesterone prevent early preterm birth in twin pregnancy?

Bottom line

Supplemental progesterone does not prevent preterm birth before 34 weeks for women with twin gestation. (LOE = 1b)

Reference

Norman JE, Mackenzie F, Owen P, et al. Progesterone for the prevention of preterm birth in twin pregnancy (STOPPIT): a randomized, double-blind placebo-controlled study and meta-analysis. *Lancet* 2009;373:2034-2040.

Study Design

Randomized controlled trial (double-blinded)

Funding

Government

Allocation

Concealed

Setting

Outpatient (specialty)

Synopsis

Progesterone supplementation in pregnancy has been shown to decrease the rate of preterm birth in some high-risk singleton pregnancies. In this randomized controlled trial, 500 women with twin pregnancy were enrolled after identification by ultrasound before 20 weeks' gestation. Women were excluded if the pregnancy was complicated by a recognized structural or fetal chromosomal abnormality. Women were randomized to receive either 90 mg progesterone gel intravaginally or placebo gel daily starting at 24 weeks, 0 days. Three women from each study arm were lost to follow-up or dropped out. There were more smokers in the progesterone group (18% vs 12%). Early preterm birth -- defined as occurring before 34 weeks' 0 days' gestation -- or intrauterine death occurred in 61 of 247 (25%) in the progesterone group and 48 of 247 (19%) in the control group (NS). A planned subgroup analysis of monochorionic and dichorionic twin gestations did not reach statistical significance, but was close at 0.056. The authors identified 2 prior randomized controlled trials of progesterone to prevent preterm birth in twin gestation, whose pooled odds ratio of 1.16 (95% CI, 0.89-1.51) was similar to the results of this study.