

Routine vs. Selective Abdominal CT: Cost Analysis



Treatment costs of acute abdominal pain (AAP) increase with a patient's age, and the costs are generally higher with routine CT compared to selective imaging, according to new research published in European Journal of Radiology. In addition, the study found that the probability of obtaining a specific diagnosis of AAP also increases with ageing.

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"The key finding was that if one considers the likelihood of obtaining specific diagnosis, then routine CT would be more cost-effective in elderly patients (over 65 years) than in their younger counterparts. This is because as an individual ages, the probability of obtaining a specific diagnosis increases more than imaging costs associated with routine CT," the authors write. "Thus, the liberal CT use can be justified in elderly patients in order to prevent harmful delays of accurate diagnosis and adequate treatment."

The study aimed to evaluate the impact of the AAP patient's age on hospital resource use and treatment costs, comparing routine abdominal CT and a selective, individually tailored imaging protocol. A total of 300 adult patients with AAP were randomised to either computed tomography (CT, n = 150) or selective imaging practice (SIP, n = 150) groups. Final analysis included 254 patients, 143 (42 patients =65 years) in the CT and 111 (32 patients =65 years) in the SIP group.

The patients in both groups went through a similar fixed set of laboratory tests, a chest radiograph in case of upper abdominal complaints and clinical investigation by the on-duty surgeon. A specialised gastrointestinal surgeon was consulted if needed.

In addition, all CT group patients underwent abdominal CT whereas in the SIP group, imaging was based on the clinical assessment. For each patient, the hospital length of stay (LOS), the numbers and costs of diagnostic and treatment procedures arising from AAP were calculated and registered.

The results showed that treatment costs, imaging costs and LOS increased in parallel with ageing in both study groups, and were generally higher in the CT group compared to the SIP group.

"In the CT group, the total costs were significantly higher for those patients 65 years or older compared to the younger age group. In contrast, in the SIP group, there was no significant difference between the age groups," write Tiina T. Lehtimäki, MD, Department of Clinical Radiology, Kuopio University Hospital in Finland and co-authors.

The researchers also found that the proportion of patients with non-specific abdominal pain was significantly lower in patients 65 years or older, compared to their younger counterparts. This finding may relate to the tendency of elderly patients to arrive at the emergency department with more urgent or advanced conditions compared to younger patients.

"Within the study groups, there were no significant differences between the sexes in treatment costs. Generally, overall resource use was greater among the elderly. This is understandable since elderly patients are often fragile with significant comorbidities that may complicate the course or treatment of the acute illness," the authors note.

Source: [European Journal of Radiology](#)

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