



Abdominal Ultrasound is not a Suitable Secondary Screening Tool for Asymptomatic Patients with a Positive Urinary Occult Blood Reaction

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BACK GROUND

In Japan, abdominal ultrasound is a common non-invasive secondary screening tool for patients with a positive urinary occult blood reaction during a general health examination. However, its performance as a screening tool in this patient population remains obscure.

OBJECT

To verify the ability of abdominal ultrasound examination as a secondary screening tool for patients with a positive urinary occult blood reaction.



METHODS

We analyzed the data of asymptomatic patients who underwent abdominal ultrasound in our hospital between 2009 and 2013 as a secondary screening after a positive urinary occult blood reaction during a general health examination and who received any of the following final diagnoses (made by biochemical examination, computed tomography, endoscopic examination, or histological/cytological examination):

- 1) urinary tract neoplasia,
- 2) urolithiasis,
- 3) hydronephrosis,
- 4) renal atrophy with deteriorated glomerular filtration rate (eGFR<45ml/min/1.73m²),
- 5) other renal morphological abnormalities,
- 6) the absence of any of these five abnormalities.

Two or more final diagnoses could be made simultaneously.

The screening ability of abdominal ultrasound was assessed based on the final diagnoses. Abdominal ultrasounds were performed by two expert physicians

RESULTS

- Three hundred and thirteen patients (98 males, 215 females; 16–91 years) underwent abdominal ultrasounds as the secondary screening test were included in the analyses.
- Abdominal ultrasound made the diagnosis of urinary tract neoplasia in 30, urolithiasis in 16, hydronephrosis in 24, renal atrophy in 17, other abnormalities in 2, and the absence of the five previously listed abnormalities in 235.
- The final diagnosis was urinary tract neoplasia in 13, urolithiasis in 14, hydronephrosis in 20, renal atrophy in 5, other abnormalities in 2, and the absence of all five abnormalities in 267.
- The sensitivity of abdominal ultrasound in screening for all five of the abnormalities together was 80.4%, and the overall specificity was 84.6%.
- In screening for hydronephrosis, the sensitivity of abdominal ultrasound was 100%, and the specificity was 98.4%.
- In contrast, when screening for urinary tract neoplasia, its sensitivity was 46.2%, and its specificity was 76.0%.

CONCLUSIONS

- Ultrasonic examination is cheap and non-invasive, but its ability to screen for kidney and urinary tract diseases is limited.
- Although its screening ability for hydronephrosis was satisfactory, simultaneously existing neoplasms or stones were sometimes overlooked with this modality.
- Thus, abdominal ultrasound is not a quite suitable secondary screening tool for asymptomatic patients with positive urinary occult blood reactions.

Nothing to Disclose!

