Renal/Kidney Calculi AUC

Renal/Kidney Calculi - Individual Articles

Outcome. Urology.

S.T.O.N.E. nephrolithometry

procedure success rate using extracorporeal shockwave lithotripsy (SWL) in patients having 0-2, 3-4, and > 4 mm RFs, respectively. A positive correlation was found between stone-to-skin distance (r = 0.6, p < 0.001). A strong positive correlation was found between mean stone attenuation by non-contrast CT and the number of shockwave lithotripsy sessions needed for complete stone disintegration (r = 0.7, p < 0.001). A positive correlation was found between stone attenuation >1000 HU and a significantly lower clearance rate, higher failure rate, and most needed three sessions, regardless of stone size.

Reference standard was radiology; no reference standard for comparison – this was a prospective, single-arm study, aiming to determine the feasibility of a non-contrast CT that would suggest that a shockwave lithotripsy treatment is not appropriate for the patient. "Potential limitations is our study include lack of chemical analysis of the retrieved stone fragments, the use of standard CT scans calibration width, which may falsely decrease the average attenuation of stone fragments, and the fact that blind on plain radiography and ultrasound to determine the outcome of SWL, which may have underestimate the real failure rate."
The study included patients who underwent percutaneous nephrolithotomy (PCNL) for renal stones between May 2012 and January 2015. Of the cohort, the mean age was 45.4 ± 12.6 years (range, 17–93 years), and the age range was significantly different among the groups (P = 0.026). The rate of ureteral orifice dilation was significantly different among the groups (P = 0.009). The mean age of 45.5 ± 15.2 years (range, 1–88 years) of patients with visible hematuria and other symptoms (P = 0.4235). CT urography is useful for the diagnosis of a cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. Cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. CT urography is useful for the diagnosis of a cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. Cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. Cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. Cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant. Cyst in the kidney was found in 5% of the patients with visible hematuria, but the difference was statistically insignificant.
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Cross sectional study

No level of evidence

To determine in which patients who present with microscopic or macroscopic hematuria CT imaging (CTU) is indicated as an imaging mode for the upper tract (UUT).

All consecutive patients who attended a modern protocol-driven hematuria clinic from January 2008 to February 2010.

Prospective study on consecutive patients who attended a modern protocol-driven hematuria clinic from January 2008 to February 2010. Elevation in history taking, physical examination, wireless via optician method, photoflash photography of hematury and bladder performed by urologists, cystoscopy, and cytology were directed at all patients, whereas the made of additional UUT imaging (urography by radiography or CT or magnetic resonance (MR) urography when CT was contraindicated) was selected according to a risk factor-based management algorithm. The added value of cross-sectional urography (CT/ MR/UC) supplementary to urography (by urologists) to detect renal masses, UUT tumors, and stones was assessed.ivariate and multivariate analysis on pretest factors for cross-sectional urography result were performed.

An initial of 1844 patients, lesions that might account for hematuria could not be identified in 262 (14.1%), whereas in 241 (12.6%) and 172 (9.3%) patients, hematuria was from benign and malignant lesions, respectively. Cross-sectional urography revealed relevant findings in 28 (2.2%) and 64 (2.7%) patients. Only 6 of 841 patients (0.7%) had a subclinical Cushing syndrome, six (2.1%) with pheochromocytoma, and five (0.6%) with primary aldosteronism. In 15 patients (1.5%), renal excretion on delayed images was confirmed in 98.5% of the examinations, whereas in 15 patients (1.5%) renal excretion on delayed images was absent (7 patients had known renal failure, 5 had no known renal function, and 3 had a renal mass (n=7)). The presence of renal contrast excretion on delayed images was confirmed in 98.5% of the examinations, whereas in 15 patients (1.5%) renal excretion on delayed images was absent (7 patients had known renal failure, 5 had no known renal function, and 3 had a renal mass (n=7)). The presence of renal contrast excretion on delayed images was confirmed in 98.5% of the examinations, whereas in 15 patients (1.5%) renal excretion on delayed images was absent (7 patients had known renal failure, 5 had no known renal function, and 3 had a renal mass (n=7)). The presence of renal contrast excretion on delayed images was confirmed in 98.5% of the examinations, whereas in 15 patients (1.5%) renal excretion on delayed images was absent (7 patients had known renal failure, 5 had no known renal function, and 3 had a renal mass (n=7)).

Patients with indeterminate results from the diagnostic test were excluded or no comment was made about how indeterminate results were handled. Readers were blinded or no comment was made about the blinding of the readers. Single reader or no inter-reader reliability was calculated.
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15. Prospective cohort study

To investigate the association between the incidence of symptomatic bladder masses and the presence of AMLs on renal PLUS, as well as the correlation between the incidence of symptomatic bladder masses and the presence of AMLs on renal PLUS. The study was conducted at an academic center with an active US training program, and patients were enrolled from among those diagnosed with renal PLUS at the center.

Results:

- A total of 141 patients were included in the study. Of these, 108 (76.3%) had AMLs on renal PLUS. Among these patients, 63 (58.5%) had an AML on follow-up imaging. The incidence of symptomatic bladder masses was significantly higher in patients with AMLs on renal PLUS (13.8%) compared to patients without AMLs on renal PLUS (2.8%).

- The presence of AMLs on renal PLUS was an independent risk factor for the development of symptomatic bladder masses (OR 5.1; 95% CI 3.2 to 6.4). The Guy’s stone score was an independent predictor of the residual stone rate (OR 6.451 and p = 0.002). A higher Guy’s stone score was associated with a greater likelihood of symptomatic bladder masses post-TPCNL.

- The Guy’s stone score and stone burden were independent predictors of the SFR after TPCNL. The Guy’s stone score was an independent predictor of the SFR (OR = 6.451 and p = 0.002). A higher Guy’s stone score was associated with a greater likelihood of symptomatic bladder masses post-TPCNL.

- The study included 43 males and 2 females. The mean age of patients with symptomatic bladder masses was 56.4 ± 15.8 years, while the mean age of patients without symptomatic bladder masses was 54.6 ± 16.5 years. The difference was statistically significant (p < 0.05).

- Of the 141 patients included, 50.7% were female, and 49.3% were male. The mean age of patients included was 55.4 ± 15.3 years. 67.4% of the patients were female, and 32.6% were male. The mean age of females included was 56.4 ± 15.8 years, while the mean age of males included was 54.6 ± 16.5 years. The difference was statistically significant (p < 0.05).

- Of the 835 patients included, 50.7% were female, and 49.3% were male. The mean age of patients included was 55.4 ± 15.3 years. 67.4% of the patients were female, and 32.6% were male. The mean age of females included was 56.4 ± 15.8 years, while the mean age of males included was 54.6 ± 16.5 years. The difference was statistically significant (p < 0.05).

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Reduced-dose computed tomography (CT) scans have been recommended for diagnosis of kidney stones as they are rarely used in the emergency department (ED) setting. Test characteristics are incompletely characterized, particularly in obese patients. The authors' primary outcome was to determine the sensitivity and specificity of a reduced-dose CT protocol for symptomatic stones, including low- and high-level cysts. Patients were only included if they were at least 18 years of age and capable of providing written informed consent. Research associates circulated in the ED to seek eligible subjects, and were also assisted automatically by pager whenever a new renal AUC CT scan was ordered. ED AUC CT scans conducted during enrollment periods were reviewed and included for final analysis. Exclusion criteria were not provided in the ED protocol. From 213 included patients, 64 with mean age 64.6 years, with 53% being men. The mean BMI was 38.9 (30.3 to 50.7) and 13.8% received the high-BMI protocol.

Stereotactic biopsy of adrenal masses: technical considerations and results. This prospective cohort study investigated the incidence, clinical features and natural history of incidentally discovered adrenal mass lesions (adrenal incidentalomas [AI]) in an unselected population undergoing radiological examination. During an 18-month period, all patients with a BMI 25 kg/m² or greater prospectively examined from a single radiology department in western Sweden. Exclusion criteria were: incidentally discovered adrenal lesions on mass lesions in patients without extra-adrenal malignancy on detection. Patients with symptoms on signs of adrenal disease, with previously known adrenal enlargement or tumour, or who were referred specifically for examination of the adrenal glands were not included. 1011 patients assessed for eligibility, 226 (21.2%) men with mean age 67 years, 62.4% per cent women; mean mean age 67.2 years, 22.5% per cent female) fulfilled the inclusion criteria. Organized biennial evaluations were performed on 136 patients, and after 24 months. Magnetic resonance imaging was performed for lesions larger than 20 mm. The indications for surgical exclusion were hormone excess, lesion diameter more than 30 mm, lesion growth or other radiological features suspicious of malignancy. Mean follow-up was 19.0 months.

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Given the rarity of ACC, the increased risk and health care costs of early-stage disease, the authors recommend consideration of the diagnosis of ACC in a subset of patients with adenomatous precursors or small ACCs.
A retrospective evaluation of 637 patients with AMH in a tertiary center over a 3-year period. Radiologic and intervention results were performed in patients with suggestive follow-up imaging, carried out in necessary, and intervention evaluation was performed within 30 months following initial guidelines.

Increased evaluation revealed that 84.4% of all tumors were malignant. The most common histology was renal cell carcinoma (41.5%), followed by Wilms tumor (24.8%) and neuroblastoma (8.6%). Most patients presented through clinical symptoms, and 50% of patients presented with non-malignant symptoms. This study indicated that patients with malignant tumors, 12.9% of patients died during the study period, both as performed at initial work-up. In patients diagnosed with an adrenal metastasis, 50.8% were deceased within 5 years. In patients with malignant tumors, 62% of patients died during the study period, as performed at initial work-up.

The oncological outcome was evaluated across a mean follow-up of 8.7 years.

Prior to CT, PCPs were asked to identify their leading diagnosis, confidence in diagnosis (confidence range, 0%-100%), rule-out diagnoses, and management plan if CT were not available. Surveys were repeated after CT. Study measures were the proportion of patients in whom leading diagnoses and management changed. PCP management was preferred in 38.1% of patients, change in management initially reported by PCPs, and change was confirmed by CT. The rate of ureteral calculi increased with more Vstone. Patients with indeterminate results from the diagnostic test were excluded or no comment was made about the blinding of the readers; single reader or no inter-reader reliability was calculated.}

Patients with indeterminate results from the diagnostic test were excluded or no comment was made about the blinding of the readers; single reader or no inter-reader reliability was calculated. The rate of ureteral calculi increased with more Vstone. Patients with indeterminate results from the diagnostic test were excluded or no comment was made about the blinding of the readers; single reader or no inter-reader reliability was calculated. The rate of ureteral calculi increased with more Vstone. Patients with indeterminate results from the diagnostic test were excluded or no comment was made about the blinding of the readers; single reader or no inter-reader reliability was calculated. The rate of ureteral calculi increased with more Vstone. Patients with indeterminate results from the diagnostic test were excluded or no comment was made about the blinding of the readers; single reader or no inter-reader reliability was calculated.
Patients with macroscopic hematuria who were investigated with an abdominal or renal ultrasound, as well as CT urography and cystoscopy as reference standard.

Inclusion criteria were time interval >12 months between index and reference exams or the absence of histopathologic proof of malignancy. Ultrasound results of the remaining 46 patients were collected and compared with the reference standard, which was the combination of MDCTU for the assessment of upper urinary tract and cystoscopy for assessment of the lower urinary tract. Final diagnosis of neoplasm was based on pathological findings.

Primary urinary tract neoplasm was diagnosed in 20% of the patients (17/86). The lesions were benign, and no evidence of positive or negative predictive values, and positive and negative likelihood ratios of ultrasound for detecting urinary tract neoplasms were 25.2 (6.4-101.6), 89.8 (13.2-601), 89.8 (27.1), 3.48 (95% confidence interval, 1.84-6.62), and 0.32 (95% confidence interval, 0.15-0.69), respectively. Sensitivity of ultrasound for the evaluation of macroscopic hematuria in the extremity of MDCTU was: lower than expected. Results of this study suggest that patients with macroscopic hematuria should undergo MDCTU as first-line imaging modality, with little added benefit from ultrasound.

There are several limitations to our study. First, our study was retrospective. A prospective study of the superior clinical value of ultrasound in the era of multidetector computed tomography should be performed.

2. Management of incidental pathology detected CT urography in emergency department patients presenting with ureteric colic.

A retrospective study of evidence

The study evaluated the performance of ultrasound for detecting renal pelvic urinary tract calculi in the setting of macroscopic hematuria by using indwelling cystostomy catheterography (IMC) and cystoscopy as reference standard.

Inclusion criteria were age <50 years old issuing from CT urography of adult patients at a emergency department over a 5.5-year period. If defined as those unrelated to upper urinary tract and cystoscopy for assessment of the lower urinary tract. Importantly, we followed up recommended for immediate evaluation of important 1.

Recently, the value of ultrasound for the detection of renal pelvic urinary tract calculi has surpassed all other imaging modalities to become the gold standard in diagnostic accuracy. As an alternative imaging modality to non-contrast computed tomography (NCCT), ultrasound has gained acceptance as a safe alternative imaging modality with comparable results to NCCT. It could be used in the diagnosis and follow-up of patients with ureteric colic.

A study included female patients and male patients (10.9 ± 4.1 vs 7.8 ± 2.1; p = 0.005). Statistically significant difference was found in the mean size of ureteral stones between proximal and distal ones, this difference was not statistically significant (p = 0.17). The mean size of ureteral stones was significantly higher in TA (+) patients compared to a lower rate for females of 29.6% (p < 0.05). Almost two-thirds of patients were female and 66 (62.3%) were male.

Female 165 (56.7), White 145 (49.8) presenting with “flank pain,” excluding patients with end stage renal disease. Female 165 (56.7), White 145 (49.8) presenting with flank pain, including patients with renal pelvic urinary tract calculi were retrospectively reviewed.

Patients with end stage renal disease were excluded or no comment was made about the blinding of the readers, single reader or no inter-reader reliability was calculated, the prevalence of important incidental findings of 12.7% is likely overestimated.

Women had a higher prevalence of important incidental findings of 12.7% compared to non-contrast CT (3.9%). While the NCCT has become the gold standard imaging modality for the detection of renal and pelvic urinary tract calculi, the performance of ultrasound for the detection of renal pelvic urinary tract calculi has surpassed all other imaging modalities to become the gold standard in diagnostic accuracy. As an alternative imaging modality to NCCT, ultrasound has gained acceptance as a safe alternative imaging modality with comparable results to NCCT. It could be used in the diagnosis and follow-up of patients with ureteric colic.
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Prospective study: Indeterminate level of evidence

To assess the efficiency of the following imaging algorithms, including intravenous urography (IVU) or computed tomography urography (CTU) on the radiological management of hereditary nephritis. Patients with request for the investigation of etiology of hereditary nephritis. Group 1 included 600 cases with normal or nearly normal US result and then they were examined with IVU. Group 2 was composed of the remaining 15 cases which had any urinary tract abnormality, and were directed to CTU. Radiological results were compared with clinical diagnosis. Eighty-seven of these patients were male (average age: 54 ± 5.6 age range: 20-65) and the rest of the patients were female (n = 15, average age: 55 ± 3.6 age range: 20-85). Thirty five patients were suffering from gross hematuria, remaining 15 patients had microscopically detected hematuria on urinalysis.

Patients were evaluated with urinary system urography (US) instead of CTU. The IVU examinations were performed by the same radiologist on a cholangiograph. Patients were examined with full urinary bladder. The lasty, ureteral, intrarenal, ureteral and intrarenal pelvis were routinely examined. According to the US findings, the patients were divided into two groups. The first group consisted of 186 patients who were normal or an US examination or had mild abnormalities such as non-obstructive renal or bladder stones, or Blånock class 1 simple renal cysts. Group 2 patients were further evaluated with CTU. The remaining 25 patients were divided into Group 2. These patients have more important findings on US examination such as follow-up, causes or ureter or urinary bladder masses, dilation of the pelvi-ureteric or ureteric and/or renal calices less than that observed class II cyst. Group 3 patients were then scheduled for computed tomography urography (CTU) examination. All of the US findings were evaluated with 2 weeks after the initial US examination (range: 1-2 days, average: 4 days ± 2 days).

A total of 45 adrenal masses in 41 patients underwent overestimated CT. Adrenal-tissue MRI. Sensitivities and accuracies using the lesion attenuation values, absolute or relative percentage washout for CT, and adrenal-to-skin ratio was calculated on all CT scans. An average age of these patients was 37.5 ± 10.6 years old. Of the 38 patients, 21 were males and 17 females. Their ages ranged from 27 to 76 years old with the mean age: 48.7 years old. Seven patients had bilateral masses. The final clinical diagnosis of 46 adrenal masses was the following: lipid-rich adenomas (10), lipid-poor adenomas (6), and nonadenomas (26).

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The authors performed a retrospective analysis of all patients found to have an incidental adrenal nodule. A total of 38 patients were suffering from gross hematuria; remaining 106 patients were normal or had no abnormalities on US. The authors concluded that CT is superior to MRI in characterizing the adrenal masses. The authors conclude that CT is superior to MRI in characterizing the adrenal masses.

Prospective study: Indeterminate level of evidence

Determining which patients with ureterolithiasis are likely to require urologic intervention in a common challenge in the emergency department (ED). The objective was to determine if normal renal sonography could identify low-risk renal calic stone patients, who were defined as not requiring urologic intervention within 60 days of their initial ED visit and can be managed conservatively.

The authors conducted a prospective cohort study including 410 adult patients presenting to the ED of a university center with suspected renal stones over a 20-month period. Patients were 63.73% male (n = 269), with a mean age of 45.2 ± 16.4 years old. 43.3% had previous history of renal stones, 6.7% with previous history of anatomic abnormality for urolithiasis, and 15.9% with previous history of hypertension.

Sensitivity 100% Specificity N.A., PPV 100%, NPV N.A., US + IVU + CTU N=35, Sensitivity 92%, Specificity 100%, PPV 100%, NPV 99%; US + CTU N=35, Sensitivity 79%, Specificity 100%, PPV 80%, NPV 61% (US); CT alone N=24, Sensitivity 92%, Specificity 100%, PPV 100%, NPV 100% (US); CTU (US + IVU) N=35, Sensitivity 80%, Specificity 98%, PPV 100%, NPV 96% (US + IVU); CT alone N=24, Sensitivity 81%, Specificity 98%, PPV 100%, NPV 98%. Twenty-nine patients were found to have urinary system malignancy or complex renal cysts and the average age of these patients was 63.2 ± 10.6 years old. Sixteen patients had renal cell carcinoma (RCC): four were males and 12 were females with ages ranging from 34 to 78 years old. One patient had transitional cell carcinoma (TCC): the patient was male and 74 years old. Patients with RCC were found to be normal or had benign cell limited urinary system diseases and the average age of these patients was 55.1 ± 12.5 years old. In conclusion, imaging algorithm based on US selection can be used as an effective approach to radiological investigation of patients with hematuria.

Prospective study: Indeterminate level of evidence

To determine whether follow-up imaging for small (5-4 cm) incidental adrenal nodules is necessary for patients without known cancer.

Patients with a known primary cancer were excluded. All patients presented with an incidental CT or CTU that documented an incidental adrenal nodule. A total of 422 patients with an incidental adrenal nodule had a mean (standard deviation [SD]) clinical follow-up of 8.1 (12.2) years. There were 208 men and 193 women with a mean (SD) age of 46.8 (13.2) years.

The authors performed a retrospective analysis of all patients found to have an incidental adrenal nodule on abdominal computed tomography (CT) scan during a 27-month period. The electronic medical record was reviewed to determine clinical outcomes in all patients with a minimum of 3 years of follow-up (range: 3-6.7 years). Unenhanced CT attenuation was measured for all nodules. (No data).

Of 410 patients enrolled, 88 (21.5%) had US for suspected renal cyst. Of these, 106 (26%) were classified as non-locally invasive. These patients underwent unenhanced CT imaging within 80 days of their ED visit. Forty (9.6%) patients had US results that were classified as indeterminate. No patients had US results that were classified as malignancy or metastasis.

The rate of urologic intervention was significantly lower in those with normal US results (p<0.001) than in those with abnormal findings. A normal US result was associated with a true rate of disease; providers were not blinded to the results. Patients with an indeterminate result from the diagnostic test were excluded or no comment was made about how the indeterminate results were handled; single reader or no clinical correlation; baseline characteristics of the control and experimental groups are different and there is no attempt to control for confounding effects; small sample size; generalization is limited.