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American Academy of Pediatrics - Section on Nephrology
American Society of Pedatric Nephrology

American Academy of Pediatrics
DEDICATED TO THE HEALTH OF ALL CHILDREN™

American Society of Pediatric Nephrology

Five Things Physicians and Patients Should Question

1

Don't order routine screening urine analyses (UA) in healthy, asymptomatic pediatric patients as part of routine well child care.

Research has shown a high incidence of misinterpretation of positive tests of screening urinalysis lead to multiple testing and increased cost and family anxiety. This is counterbalanced by the low prevalence of chronic kidney disease (CKD) and bladder cancer in children. One study showed that the calculated false positive/transient abnormality rate approaches 84%. These factors account for the low yield in detecting preventable and/or treatable problems in a healthy asymptomatic population with respect to cost and overall benefit.

With consideration of the currently available evidence, we recommend limiting screening UA in patients who are at high risk for chronic kidney disease (CKD), including but not necessarily limited to patients with a personal history of CKD, acute kidney injury (AKI), congenital anomalies of the urinary tract, acute nephritis, hypertension (HTN), active systemic disease, prematurity, intrauterine growth retardation, or a family history of genetic renal disease, to improve the cost-benefit ratio.

2

Do not initiate a work up for hematuria or proteinuria before repeating an abnormal urine dipstick analysis (UA).

Abnormal dipstick urine analyses (UA) need to be repeated due to the high incidence of false positive tests. Abnormal urine testing results are often due to difficulties in obtaining a non-contaminated urine specimen or transient abnormalities seen with acute illnesses.

Repeating a UA prior to initiation of a full evaluation can decrease the need for additional testing, as described below:

- Repeat a clean catch UA with microscopy x 3 for patients noted to have microscopic hematuria to look for evidence of chronic hematuria.
- Repeat UA as a first AM void along with a urine protein/creatinine ratio in patients noted to have proteinuria on a random UA.

3

Avoid ordering follow-up urine cultures after treatment for an uncomplicated urinary tract infection (UTI) in patients that show evidence of clinical resolution of infection.

Studies have shown that clinical resolution of infection is adequate for determining effectiveness of antibiotic therapy after treatment for a UTI.

4

Do not initiate an outpatient hypertension (HTN) work-up in asymptomatic pediatric patients prior to repeating the blood pressure measurement.

Blood pressures in children need to be taken in accordance with standard methodology prior to the diagnosis of HTN in order to decrease the number of false positive readings that are often seen in pediatric patients. Methodology should include assessment of blood pressure in the upper extremity, by manual auscultation, with an appropriate-sized cuff.

NHLBI and AAP guidelines recommend repeating blood pressures (BP) x 3 at the same visit and at 2 additional visits to document persistent BP elevation prior to initiating a work up for pediatric hypertension (HTN) due to the possibility of falsely elevated BP readings in children as the prevalence of elevated blood pressures decreases significantly on repeated measures.

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5

Do not place central lines or peripherally inserted central lines (PICC) in pediatric patients with advanced (Stage 3-5) chronic kidney disease (CKD)/end-stage renal disease (ESRD) without consultation with pediatric nephrology due to goals to avoid adverse events, preserve long-term vascular access, and avoid unnecessary and costly procedures.

Preservation of vascular access is critical for long-term dialysis patients. Placement of central and PICC lines has been associated with an increased incidence of complications including vascular injury, thrombosis and central venous stenosis that can limit future use for dialysis access. Placement of central and PICC lines also potentially increases cost due to the treatment of complications from the lines, requirement for radiological tests to identify patent vessels for dialysis, and the necessity for repeat surgical procedures to create vascular access for dialysis.

Studies in children are limited, but research about PICC lines demonstrates a 23-57 percent incidence of thrombosis in adults and increased complications in children who are exposed to multiple PICC line placements. Studies from adult patients have demonstrated the high risk of vascular injury after central line and PICC line placement. National guidelines from the Kidney Disease Outcomes Quality Initiative (KDOQI) have recommended avoiding placement of central lines in CKD patients, if possible, due to the high risk of complications. The recommendation to avoid central line placement is the basis of vascular access preservation in the "Fistula First Innovation" program for adult dialysis patients. National guidelines from the Kidney Disease Outcomes Quality Initiative (KDOQI) state the following: "In patients with CKD stage 4 or 5, forearm and upper-arm veins suitable for placement of vascular access should not be used for venipuncture or for the placement of intravenous (IV) catheters, subclavian catheters, or peripherally inserted central catheter lines (PICCs). Because of the substantial risk for loss of useable upper-extremity veins and central venous stenosis with PICCs, the Work Group recommends strongly that PICCs not be used in patients with CKD". Special consideration may be necessary in emergency circumstances in which no other safe access is achievable.

How This List Was Created

The American Academy of Pediatric Section on Nephrology Executive Committee (AAP SONp) and the American Society of Pediatric Nephrology Clinical Affairs Committee (ASPN CAC) utilized a four-stage process to develop its list. First, the two groups independently developed lists based on various common assessments, evaluations, and treatments in the practice of pediatric nephrology. During the second stage, the committee chairs consolidated the lists and then re-convened the individual committees to narrow the topics on the list. During the third stage, a final list of five practices was developed and consensus achieved by both committees that were found to be supported by evidence. The final stage occurred when the list was reviewed and approved by the AAP's Executive Committee and the ASPN CAC.The guidance in this list does not indicate an exclusive course of treatment or serve as a standard of medical care. Variations, taking into account individual circumstances, may be appropriate.

Sources

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The mission of the ABIM Foundation is to advance medical professionalism to improve the health care system. We achieve this by collaborating with physicians and physician leaders, medical trainees, health care delivery systems, payers, policymakers, consumer organizations and patients to foster a shared understanding of professionalism and how they can adopt the tenets of professionalism in practice.

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About the American Academy of Pediatrics

The American Academy of Pediatrics is an organization of 68,000 primary care pediatricians, pediatric medical subspecialists and pediatric surgical specialists dedicated to the health, safety and well-being of infants, children, adolescents and young adults.

For more information, visit www.aap.org.

About the American Society of Pediatric Nephrology

The American Society of Pediatric Nephrology (ASPN) is a professional society composed of pediatric nephrologists whose goal is to promote optimal care for children with kidney disease and to disseminate advances in the clinical practice and basic science of pediatric nephrology. ASPN currently has over 600 members, making it the primary representative of the Pediatric Nephrology community in North America.

For more information or to see other lists of Five Things Physicians and Patients Should Question, visit www.choosingwisely.org.