Acute Pyelonephritis

An infection involving the kidney is known as acute pyelonephritis. This usually starts as a urinary tract infection that moves to the kidney. Acute pyelonephritis is commonly treated with antibiotics. Imaging studies are not usually required but may be needed if an individual has a history of diabetes or kidney stones (https://www.radiologyinfo.org/en/info/stones-renal), is immunocompromised, or is not responding to treatment.

A CT of the abdomen and pelvis (https://www.radiologyinfo.org/en/info/abdominect) with or without intravenous (IV) contrast is usually the most appropriate test for adults. An MRI (https://www.radiologyinfo.org/en/info/mri-abdomen-pelvis) with or without IV contrast of the abdomen and pelvis is also appropriate. One disadvantage of MRI compared with CT is that MRI does not find smaller stones. Use of IV contrast may provide important information about the kidney function. If a patient cannot tolerate contrast, diffusion-weighted imaging on MR can be used as an alternative, for example, in people with kidney function problems and pregnant or lactating women.

Ultrasound of the kidneys and bladder (https://www.radiologyinfo.org/en/info/abdominus) is sometimes appropriate. It can be done at the bedside and does not require use of contrast material. Color and power Doppler should be included to improve the sensitivity but may still miss problems with the kidneys.

Renal scintigraphy (https://www.radiologyinfo.org/en/info/renal) is a test that uses a camera and radioactive tracer (Tc-99m) to look at how the kidneys work. It is sometimes appropriate for evaluating children with pyelonephritis. It may also help find reflux and birth defects that could cause repeated infections, scarring, and loss of kidney function.

— By Celena Romero, PhD, MBA, RD, CPHQ, Jennifer W. Uyeda, MD. This information originally appeared in the Journal of the American College of Radiology.

Disclaimer

This information is copied from the RadiologyInfo Web site (http://www.radiologyinfo.org) which is dedicated to providing the highest quality information. To ensure that, each section is reviewed by a physician with expertise in the area presented. All information contained in the Web site is further reviewed by an ACR (American College of Radiology) - RSNA (Radiological Society of North America) committee, comprising physicians with expertise in several radiologic areas.

However, it is not possible to assure that this Web site contains complete, up-to-date information on any particular subject. Therefore, ACR and RSNA make no representations or warranties about the suitability of this information for use for any particular purpose. All information is provided "as is" without express or implied warranty.

Please visit the RadiologyInfo Web site at http://www.radiologyinfo.org to view or download the latest information.

Note: Images may be shown for illustrative purposes. Do not attempt to draw conclusions or make diagnoses by comparing these images to other medical images, particularly your own. Only qualified physicians should interpret images; the radiologist is the physician expert trained in medical imaging.

Copyright

This material is copyrighted by either the Radiological Society of North America (RSNA), 820 Jorie Boulevard, Oak Brook, IL 60523-2251 or the American College of Radiology (ACR), 1891 Preston White Drive, Reston, VA 20191-4397. Commercial reproduction or multiple distribution by any traditional or electronically based reproduction/publication method is prohibited.

Copyright © 2022 Radiological Society of North America, Inc.