

Renal Function Tests

Objectives

The students should be able to:

- Enumerate the functions of kidney
- Discuss the biochemical test which are done to assess the function of kidney
- Discuss the abnormalities in biochemical tests associated with renal impairment

In the attached presentation the functions of kidney have been enlisted and not dealt in detail as it is covered in physiology. Please refer to Physiology books for the same. I personally recommend Guyton for the same.

The biochemical tests for assessing kidney function is divided in assessing glomerular and tubular function, however in today's clinical practice it is not important to classify it. What is important for you is to be abreast with the tests you need to diagnose and assess progression of renal disease. You have to go through the classification of renal diseases (Pre-renal, renal and post renal)

The most important serum analytes for renal function are urea and creatinine. Sometimes when there is lack of resources only these two are evaluated as a screening for kidney diseases. Creatinine is a more sensitive marker amongst the two. Other analytes like total protein, albumin, electrolytes help in managing the complications associated with renal disease and also to monitor effectiveness of treatment. You should be able to enlist them and know their reference range.

Though I have included hemogram in the presentation and it is a very important part of renal function test especially for the endocrine part, however you have to remember that this does not come under biochemical tests and is usually done in the pathology laboratory. Decrease in hemoglobin indicates that the kidney disease has progressed to advanced stages.

Urine examination plays an important role in assessing renal function. Please read about proteinuria in more detail. Differentiate between microalbuminuria and frank proteinuria. I have not included nephrotic syndrome in the presentation but you have to read about it in some detail. Learn about the parameters which define nephrotic syndrome.

The test for tubular function has been included for academic purposes though they are not commonly done these days. Please refer to Dr Puri's book for detailed discussion on the same.

Please feel free to contact me on my email address, Rajarshi.kar@gmail.com for any queries.

Thank you and stay safe.

Dr Rajarshi Kar