DEFINITION

1. **Interstitial nephritis** is an inflammatory disease of the renal interstitium. It may be primary or secondary and has two clinical forms, acute and chronic. In glomerular renal disease, secondary interstitial nephritis may occur as renal function deteriorates.

2. Until recently primary nephritis was thought to arise from bacterial infection of the urinary tract. It is now known that in adults, bacterial infection does not lead to interstitial nephritis unless there is also obstruction in the urinary tract. In childhood, when renal infection and vesico-ureteric reflux may co-exist, infection may lead to interstitial nephritis. The previous confusion may relate to the fact that chronic interstitial nephritis commonly presents with superimposed bacterial infection.

CLINICAL MANIFESTATIONS

3. **Acute interstitial nephritis** may present with acute oliguric renal failure with slowly progressive renal failure. In both acute and chronic interstitial nephritis tubule dysfunction is prominent. Urine abnormalities include proteinuria, concentrating defects and excess urinary sodium and potassium. These urinary abnormalities are found more commonly and earlier in interstitial nephropathies than in the glomerulonephropathies. A firm diagnosis of primary interstitial nephritis should only be made after renal biopsy.

4. Acute interstitial nephritis is often accompanied by systemic upset including fever, arthralgia and eosinophilia. Renal biopsy shows features which are characteristic. The condition usually resolves completely.

5. **Chronic interstitial nephritis** presents as chronic renal failure. Anaemia, gastrointestinal problems and hypertension may occur. Only about one third of the patients are hypertensive as the condition is characteristically one of salt loss and relative hypovolaemia. A number of patients present with urinary infection, loin pain, haematuria or renal colic.

AETIOLOGY

6. There are many causes of acute and chronic primary interstitial nephritis. These include:

    6.1. Congenital – for example Alport's disease.

    6.2. Immunological – Sjögren's syndrome, methicillin nephritis and kidney graft rejection.

    6.3. Metabolic – potassium depletion.

    6.4. Chemical – cadmium intoxication, lead and lithium nephropathy.

    6.5. Physical – crystal nephropathy, X irradiation.

6.6. Mechanical – reflux nephropathy.

6.7. Toxin induced – Balkan nephropathy.

6.8. Vascular – ageing, diabetes, sickle cell disease.

6.9. Bacterial – chronic pyelonephritis.

6.10. Drugs – analgesics, anticonvulsants, anticoagulants and non-steroidal anti-inflammatory drugs.

7. Of the aetiological agents listed above, acute primary interstitial nephritis most commonly arises due to drug sensitivity reactions. The exact mechanisms are unknown.

8. Chronic primary interstitial nephritis may arise from any of the listed causes. The condition is becoming more common and this is thought to reflect the increasing use of therapeutic drugs which are metabolised in the kidney and are therefore potentially nephrotoxic.

9. Identified nephrotoxic compounds include heavy metals, hydrocarbons, organic solvents, plant and animal toxins. Of the therapeutic drugs presently known to be nephrotoxic, antimicrobials, anticonvulsants and analgesics are the most important. In Western communities there is correlation between analgesic consumption and prevalence of chronic interstitial nephritis.

CONCLUSION

10. Interstitial nephritis is inflammation of the renal interstitium. It may be secondary to glomerular disease. Primary interstitial nephritis may be acute or chronic. Many aetiological factors have been identified. In both acute and chronic forms it frequently is an iatrogenic disease.

REFERENCE

Asscher A W. Interstitial nephritis and urinary tract infections. In: (Eds) Weatherall D J, Ledingham J G G and Warrell D A. Oxford Textbook of Medicine. Oxford. Oxford University Press. 2nd Ed. 1987:18.67-68 and 18.112-116.

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