

Proteinuria as an indicator of early renal disease in bull terriers with hereditary nephritis

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Abstract

A group of non-azotemic bull terriers from families with hereditary nephritis had significant subclinical renal disease. Of the renal function tests carried out, proteinuria, almost exclusively albumin, was a reliable and early indicator of glomerular abnormality. While 24-hour urinary protein excretion (24 UPE) in the bull terriers was significantly higher than in a group of normal dogs of other breeds, urinary protein excretion (WE) was also significantly higher when measured by simple single sample tests such as the urinary protein to urinary creatinine ratio (UP/C). UPE in bull terriers was correlated with increasing age, in contrast to lack of correlation in the normal dogs. The degree of proteinuria in affected bull terriers from which renal biopsies were taken correlated with the severity of histopathological changes which mainly affected glomeruli. Light microscopic examination revealed segmentally thickened glomerular and tubular basement membranes, thickened Bowman's capsules and adhesions between glomerular capillaries and Bowman's capsules. Other renal function tests were performed but failed to detect subclinical disease. It is suggested that hereditary nephritis (HN) in bull terriers is similar to that seen in Samoyeds, Dobermann Pinschers and humans.

Key takeaways

1. Proteinuria is a reliable early indicator of subclinical renal disease in bull terriers with hereditary nephritis.
2. Bull terriers exhibited a mean 24-hour urinary protein excretion of 23.57 mg/kg, significantly higher than normal dogs' 4.15 mg/kg.
3. Histopathological changes in renal biopsies correlate with the severity of proteinuria, primarily affecting glomeruli.
4. Urinary protein to urinary creatinine ratios (UP/C) can effectively estimate proteinuria in bull terriers.
5. Hereditary nephritis in bull terriers shares similarities with conditions observed in humans and other breeds.