Blood Urea Nitrogen (BUN)

- Evaluates the amount of urea nitrogen in the blood, which can indicate kidney function.

Urea, commonly referred to as blood urea nitrogen (BUN), is a nitrogenous compound produced in the liver as a final product of protein metabolism and the urea cycle. Approximately 85% of urea is excreted by the kidneys, while the remainder is eliminated through the gastrointestinal tract.[1]Elevated serum urea levels are observed in situations where renal clearance is compromised, such as in acute and chronic renal failure. Additionally, urea levels may rise in conditions unrelated to kidney dysfunction, including upper gastrointestinal bleeding, dehydration, catabolic states, and diets high in protein. Conversely, urea levels may decrease in instances of starvation, low-protein diets, and severe liver disease. Although serum creatinine provides a more precise evaluation of renal function than urea, urea levels tend to rise earlier in the course of renal disease.[2]
When BUN levels are elevated, the BUN-to-creatinine ratio can serve as a valuable tool for distinguishing between pre-renal and renal causes. In cases of pre-renal disease, this ratio typically approaches 20:1, while in intrinsic renal disease, it is generally around 10:1. Notably, upper gastrointestinal bleeding may present with a significantly elevated BUN to creatinine ratio, occasionally exceeding 30:1.[3]

References

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