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Iron status in serum and urine of Wistar rats with Renal Failure

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The use of alternatives techniques to investigate specific inorganic elements in biological fluids has increased in last year, presenting significant progress in clinical tests. In this investigation, Iron in serum and urine of control and renal failure Wistar rats groups were quantified by EDXRF technique using a Portable X-Ray Fluorescence Spectrometry (PXRFS). The kidneys have an important role in removing waste products, balancing out water, salt and other minerals from the blood. When kidneys decrease or lose their filtering ability, dangerous levels of wastes may accumulate and electrolytes may build up in the body. In most of the cases, it is irreversible; therefore, the rate of mortality in the world has increased in the last few decades. Investigations related to patients with kidney dysfunctions are now showing an Iron deficiency (mainly due to poor dietary intake or sometimes occult bleeding). There has also been, however, patients who are showing an Iron overload, which is caused by inefficient treatment, occurring in patients undergoing hemodialysis for long periods (> 5 years). The portable spectrometer showed to be suitable for these clinical tests and provides an alternative procedure for Iron analysis (in body fluids) in renal treatment.