

A proposito di un importante fattore di variabilità nella determinazione dell'attività urinaria della N-acetil- β -D-glucosaminidasi: la contaminazione delle urine con liquido seminale

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KEY WORDS

N-acetyl- β -D-glucosaminidase; NAG; semen; variability factor

SUMMARY

«An important variability factor in determination of urinary activity of N-acetyl- β -D-glucosaminidase: contamination of urine with semen». Background: Urinary N-acetyl- β -D-glucosaminidase (U-NAG) and its isoenzyme B (U-NAG-B) have been demonstrated useful and early markers of renal damage, although they are present in many other tissues and organs. Objectives: To evaluate semen contamination of the urine and its role in variability of U-NAG. Methods: To assess control group values β_2 -microglobulin, retinol-binding protein and U-NAG were measured in the urine of 30 healthy, non-smoking and non metal-exposed adults (19 females and 11 males). Results: In four urine samples U-NAG was higher than the method reference value (5 U/g creatinine), without increases in other functional markers. Microscope examination revealed the presence of sperm in these samples. U-NAG variability decreased after the exclusion of these four values. The role of contamination was confirmed by adding semen to urine: when semen to urine ratio was 1:1000, enzyme activity was more than twice the basal level. Conclusions: U-NAG variability is strongly increased by contamination with semen, where enzyme concentration (especially NAG-B) is very high. Increased excretion of U-NAG and of its iso-form (U-NAG-B) in males, not correlated with other renal alterations or with exposure to heavy metals or other renal toxic substances, should be carefully evaluated and microscopic observation is advisable to detect the presence of sperm in urine.