

Section two

Synopsis

SPOT URINE OSMOLALITY: CREATININE RATIO IN HEALTHY HUMANS

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Spot urine albumin/ creatinine ratio is a reliable estimate of 24-hour urine albumin excretion since it accounts for the variability in urine concentrations over time. Similarly urine osmolality: creatinine (Osm/cr) ratio of a spot urine sample may give an overall estimate of urinary excretion of solutes, renal concentrating ability and body hydration status.

We used a pilot study to determine whether spot urine Osm/cr is a reliable indicator of body hydration status in healthy individuals. Pilot study concluded that spot urine Osm/cr in healthy adults is a reproducible entity in steady state and it is a consistent urinary index in steady state.

The objective of the second study thereafter was to establish spot urine Osm/cr in healthy humans and its variation in relation to gender, age, body weight and height.

Two hundred and thirty two healthy volunteers participated. They were stratified to 7 age groups. i.e. (a) 1.5-5 years, (b) >5-10 years, (c) >10-20 years, (d) >20-

30years,(e)>30to45(f)>45- 60years,(g)>60years.15 males and 15 females were allocated for each age category. A spot urine sample was collected from all patients and was analyzed for urine osmolality and creatinine in batches of 50.

The influence of age, sex, body weight and height on the urine Osm/cr was analyzed using multiple linear regression and only height showed a significant correlation. R square was 0.02 suggesting that height may make 2% influence on urine Osm/cr. Further analysis after excluding 1.5 to 5 year age group reveal no significant correlation between age,sex,body weight and height with Osm/cr ratio

The study concluded that urine Osm/cre ratio need no correction for gender, age and body weight above the age of 5 years.