

Miner Electrolyte Metab. 1988;14(2-3):97-102.

**Comparison of the effects of sodium bicarbonate versus sodium citrate on renal acid excretion.**

Oster JR, Stemmer CL, Perez GO, Vaamonde CA.

Citrate is used commonly as an alkalinizing agent and in the management of nephrolithiasis, but its quantitative effect on acid-base homeostasis, as judged by changes in renal net acid excretion, has not been delineated. We therefore administered 61 mEq of sodium citrate/day for 4 days to 10 normal volunteers and compared the results to those obtained in 10 normal subjects (4 of whom also participated in the citrate protocol) given 60 mEq/day for 4 days of sodium bicarbonate, the prototypical alkalinizing agent. We found that the sodium citrate group experienced an average reduction in net acid excretion (45.5 +/- 7.2 mEq/day) that was very similar to that (42.0 +/- 7.2 mEq/day) induced by the same amount of sodium bicarbonate. In both groups, the reduction in net acid excretion was equivalent to approximately 70% of the alkali administered. The latter appeared to relate to an average negative hydrogen ion balance of approximately 15 mEq/day, since there was an increase in blood [HCO<sub>3</sub>] in each group of about 2.5 mEq/l. We conclude that the findings demonstrate that the short-term effects of sodium citrate on acid-base homeostasis in normal subjects are indistinguishable from those of sodium bicarbonate.