

Derangement of acid-base balance in uremia and under hemodialysis.

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Uremic acidosis is due to impaired excretion of ammonium ions in the presence of unchanged acid production. However, the degree of acidosis is quite variable among uremic patients and pre-dialytic bicarbonate levels are mainly independent of dialytic base supply. These observations strengthen the suggestion that extra-renal mechanisms may play a significant role in controlling acid-base balance in uremic patients. The possible effects of diet, intestine, bone, intermediate metabolism, and the global acid-base balance are discussed. The metabolic and clinical effects of mild uremic acidosis are not well defined. In fact, no long-term clinical study have produced clear evidence for increased protein catabolism in humans. Some data provide evidence for reduced bone mineral content and osteomalacic lesions in uremic patients with severe acidosis. Overall, the impact of the present dialytic techniques on acid-base control is quite small, since no major difference is observed in uremic patients treated with different dialytic schedules. Furthermore, the base supply by dialysis does not seem to represent the main mechanism for acid-base correction by dialysis. In conclusion, at present time, metabolic acidosis of uremic patients is often mild and not accompanied by major symptoms. Probably, more attention needs to be paid to the possible noxious effect of over-correction of acidosis.