

## Acetate-Free Hemodialysis

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Although acetate has been the main buffer used in dialysis for more than 20 years, reports have accumulated in the past decade suggesting that its use may contribute to dialysis morbidity. Acetate dialysate has been linked to hypotension, myocardial depression, hypoxemia, and abnormal lipid metabolism.

Bicarbonate dialysis is now the dominant modality worldwide. Conventional bicarbonate hemodialysis is not totally acetate-free. Although the amount of acetate in conventional bicarbonate dialysis solution is very low, plasma concentration of acetate in patient is much less than that of conventional dialysis solution. Therefore, standard hemodialysis can still result in significant transfer of acetate to the patient. Consequently patients are subjected to a certain amount of acetate loading during dialysis.

Matsuyama et al. reported that on-line HDF using acetate-free dialysate contributes to alleviating bio-incompatible events associated with microinflammation, leading to improvement in the nutritional status in hemodialysis patients. In addition, the small amount of citrate in dialysate has been suggested to have some anticoagulant properties.

Recently, we performed prospective study to assess whether acetate-free dialysate would permit a safe reduction in heparin dose in chronic hemodialysis patients. As a result, use of acetate-free dialysate permitted a reduction in dose of heparin during hemodialysis without reduced ultrafiltration of clotting of dialysis circuit. There were no differences in hemodynamic and biochemical parameters between conventional hemodialysis and acetate-free dialysis.

The use of citrate instead of acetate as a dialysate in bicarbonate hemodialysis is safe and decrease dosage of heparin used during hemodialysis treatment.