

# THE IMPACT OF ULTRAFILTRATION THERAPY ON RENAL FUNCTION IN PATIENTS WITH REFRACTORY HEART FAILURE

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**Background:** Diuretics are thought to contribute to deterioration of renal function in patients with refractory heart failure (HF).

Extracorporeal ultrafiltration (UF) represents a novel therapeutic strategy in this setting, potentially lacking the adverse effects of diuretics. Consequently, it has then been suggested that UF therapy, using portable devices, could portend reno-protective effects in these patients.

**Methods:** We searched articles cited in PubMed database from 1970 to 2008 using key words: “ultrafiltration” and “heart failure”. All types of publications including case reports and case series were identified and relevant articles were selected. We then reviewed and compared the results of those studies which used the novel portable device approved by the FDA for management of patients with refractory HF.

**Results:** A total of 56 relevant articles were identified on the use of UF for patients with HF. Seven studies that used the portable UF device were selected; 3 randomized controlled trials and 4 without any control group. In six studies, serum creatinine level was used to evaluate renal function; none of these studies found any significant change in serum creatinine level after UF therapy. One randomized controlled trial used iothalamate to specifically assess glomerular filtration rate. Similar to the diuretic group, patients with decompensated HF showed a decline in renal function after UF therapy.

**Conclusion:** In patients with refractory HF, available data do not yet convincingly support a “reno-protective” effect from UF therapy. Larger controlled trials are needed to further establish the impact of UF therapy on renal function in these patients compared with diuretics.