

GAMBRO: OFFERING A TOOL FROM CARDIO/RENAL MANAGEMENT

CHF Relief Within Hours Rather Than Days

A recent paper sponsored by the American College of Cardiology/American Heart Association, and published in the *Journal of the American Geriatric Society* Jan. 2003, underscores the evolving challenge that our enhanced treatment of CAD and hypertension has brought about. As the lead author, A. Ahmed, MD reports: "Heart failure (HF) is the only cardiovascular disease with increasing incidence and prevalence. Most HF patients are older adults. With the aging of the population and effective treatment of hypertension and coronary artery disease, the two major underlying causes of HF, the number of older Americans with HF is expected to rise significantly in the coming decades. HF is the number-one hospital discharge diagnosis for older adults. It is one of the causes of frequent hospital readmissions, reflecting acute decompensation and compromised quality of life for patients and increased cost and resource use for the healthcare system."

Gambro (Lakewood, CO) is a global medical technology and healthcare company with leading positions in renal care—services and products—and blood component technology. Gambro's **Prisma® System** consists of 5 different Continuous Extracorporeal Blood Therapies (CEBT), including ultrafiltration, hemofiltration, hemodialysis, hemodiafiltration, and therapeutic plasma exchange. Not only is Gambro one of the leading providers of kidney dialysis services in the world with a 55% market share, it is on the cutting-edge of advancing therapies for the increasing CHF

population. With clinical data demonstrating the benefits of hemofiltration (HF) and ultrafiltration (UF) technologies in the management and amelioration of CHF, the Prisma System is a valuable addition to the Cardiac Care arena. **Continuous Veno-Venous Hemofiltration (CVVH)** and **Slow Continuous Ultrafiltration (SCUF)** offer significant benefits to CHF patients.

The Prisma System—Individuating Patient Care



Geoffrey Sheinfeld, MD, is the Director of Adult Critical Care at the Memorial Regional Hospital/Memorial Healthcare (Hollywood, FL). An internist with dual specialties in Nephrology and Critical Care, Dr. Sheinfeld has extensive experience in the intricate relationship and implications of concomitant cardiac/renal failure. Says Dr. Sheinfeld: "Many studies have demonstrated that as goes the heart, the kidneys follow. The urgent need for cardio/renal team management of the patient can no longer be ignored."

This new paradigm puts the cardiologist on the front line—initiating treatment while renal function remains normal. This is an important scientific development considering that the number of patients who suffer from CHF is expected to increase by 8% - 11% each year, and that initiating treatment early reverses the cycle of CHF and ensuing renal failure. Specifically, UF can enhance cardiac performance and BP control and has been shown to reduce CHF mortality and morbidity.


The Prisma System offers SCUF and CVVH technologies, which opens the door to cardio/renal team management—balancing patient care and offering alternatives to traditional treatment for fluid overload associated with Acute Decompensated Heart Failure and CHF. Significant advantages in the treatment of fluid overload associated with CHF. The Prisma System safely and effectively removes excess fluid *within hours rather than days*. Further, unlike other therapies that solely remove excess fluid, the CVVH controls solutes such as electrolytes, buffer, and metabolic waste products while removing damaging large molecules including Myocardial Depressant Factor (TNF-Alpha). CHF patients can be treated by therapies such as CVVH to remove excess fluid and control solutes before their kidneys fail. Additionally, CHF patients who are resistant to diuretics can be treated by SCUF to simply remove excess fluids. Or, they can be treated by CVVH to remove excess fluid and harmful solutes such as excess creatinine, urea and TNF-Alpha. CVVH also offers an avenue to deliver bicarbonate to the acidotic CHF patient. Says Dr. Sheinfeld: “It’s a win/win situation for cardiologist, nephrologist and patient. The Prisma System is useful in preventing renal failure, as well as down-regulating

damaging cardiac hormones.” Some studies have demonstrated that hemofiltration can assist in down-regulating neurohormones associated with the vicious cycle of CHF.

Until now, the treatment for CHF has typically involved the use of oral drug therapy prior to hospitalization and intravenous drug therapy during the hospital stay. Once admitted, fluid-overloaded patients typically spend up to 6 days at a total cost of \$10,000 per stay to remove fluid. Unfortunately, this mode of treatment is problematic for the following reasons: 1) Drug therapies can contribute to a vicious cycle of fluid overload. 2) Diuretics can lead to short and long-term adaptation responses such as sympathetic activation and rennin-angiotensin-aldosterone axis stimulation (RAAS) that limit their effectiveness and lead to harmful adaptive responses. 3) The side effects of diuretics also limit their usefulness. 4) Diuretic resistance can occur especially in those with nephrotic syndrome or inadequate renal perfusion. 5) Stages III and IV CHF are often refractory to conventional drug therapies.

In the ICU environment, the Prisma System provides versatile automated control of all CEBT needs—ranging from removal of fluid for CHF to

providing renal function for the patients in critical condition. “The Prisma CVVH works beautifully in CHF; it’s predictable, removes not only damaging molecules, but up to 5-6 liters of fluid a day while sustaining normal RAAS,” says Dr. Sheinfeld.

In summing up, Dr. Sheinfeld says: “The urgency of cardio/renal team management can not be overstated! And the Prisma System, with its long record of predictability, safety, performance and ease of use is the best tool. In my experience, a single one to two day CVVH treatment results in a 90—120 day sustained improvement in the patients RAAS, minimizing hospital stay and enhancing quality of life.” 

For more information concerning the Gambro Prisma System, call Gambro at 800-525-2623 x4460 or 303-231-4460, or visit the Gambro Web site at www.usa-gambro.com.

References:

Due to space constraints, the 52 references utilized for this article will not be shown. For a complete list of references, please contact the Gambro Cardio/Renal Management Consultant at 1-800-525-2623 x4460.