**MIXED TREATMENT ANALYSIS OF TOLVAPTAN, ULTRAFILTRATION AND LOOP DIURETICS IN THE MANAGEMENT OF ACUTE CONGESTIVE HEART FAILURE**

**S. Dayanand1**, J.M. Martinez2, R. Chait3

1. Univ of Central Florida, Kissimme, FL, USA

2. Einstein Medical Ctr, Philadelphia, PA, USA

3. Univ of Miami/JFK Medical Ctr Palm Beach Regional GME Consortium, Atlantis, FL, USA

*Introduction*: Tolvaptan a V2 receptor antagonist has been used to treat volume overload in patients with heart failure (HF).Hypothesis: To compare the efficacy of Tolvaptan to furosemide and ultrafiltration when used in the management of volume overload in HF.

*Methods*: Studies were extracted from an electronic literature search of PubMed, MEDLINE and EMBASE. Of all relevant RCTs, 9 RCTs, including 5278 patients were identified. The main outcome of interest to assess effectiveness in the treatment of volume overload was the mean relative reduction of body weight from baseline. There were several other outcomes of interest including relative increase in urine output and change in dyspnea scores. Outcomes for safety, primarily serious adverse events, adverse events causing discontinuation of drug, hypotension, change in baseline mean creatinine values and incidence of cardiac arrhythmias were also compared. A mixed-treatment comparisons analysis was used to compare each of these drugs to one another. Calculation of the probability that each treatment is best was implemented using the Bayesian Markov chain Monte Carlo method.

*Results*: Ultrafiltration had a 78% probability of being the best agent to cause significant reduction in body weight, it was also noted to be associated with the highest rank probability of causing deterioration of renal function. Tolvaptan had a 73% probability of being the second best agent to cause reduction in mean body weight. Tolvaptan showed a relative decrease of 0.72 kg (-0.21; 1.71) of the mean body weight when compared to furosemide. Tolvaptan was associated with the highest rank probability of 61% in causing any adverse events, followed by ultrafiltration and Loop diuretics.

*Conclusion*: The results of the study show that Tolvaptan has a comparable efficacy to that of furosemide and ultrafiltration, when used in the management of volume overload in HF but is associated with a higher risk of adverse events