



Heart Failure and Cardiomyopathies

WIRELESS MONITORING FOR HEART FAILURE PATIENTS: A META-ANALYSIS

Poster Contributions
Poster Hall, Hall C
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Background: An array of implantable and external devices for telemonitoring has emerged with variable effectiveness and cost benefit, but there have been no meta-analyses to assess the effectiveness of these devices.

Methods: Medline and Cochrane database searches were conducted. After review of abstracts and selected full text articles, we identified 5 randomized trials for inclusion. Quality was assessed using the Cochrane Risk of Bias Tool. We assessed the number of HF related events and hospitalizations during the follow-up period. A random effects model was used. Subgroup analysis was based on categorizing devices into direct hemodynamic measuring devices (DHMDs) and impedance-based devices (IBDs).

Results: Of the 5 trials, 3 assessed DHMDs and 2 IBDs. Of the 2 trials which assessed IBDs, one was stopped prematurely because of increased HF related events in the intervention arm but it was included in the analysis. One. The relative risk for HF related events for all studies combined was 0.83 (95% CI 0.70-0.99). Applying this RR to the control event rate, we calculated a number needed to treat of 6. Meta-analysis of the two IBD studies did not find a reduction in HF related events i.e. 0.94 (95% CI 0.41-2.12). Whereas, the 3 DHMD studies did have a significant impact on HF related events 0.82 (95% CI 0.69-0.98). The 2 trials that examined the secondary outcome of HF readmissions were the COMPASS and CHAMPION trials, with a 30% reduction in HF readmission with a relative risk of 0.71 (95% CI 0.60-0.83).

Conclusions: Overall, telemonitoring implantable devices in NYHA III/IV HF patients reduces HF related events by about 17%. IBDs tend to be less effective when compared to DHMDs. There is 30% reduction in HF readmission rates for NYHA III/IV patients DHMDs are implanted.