

HEART FAILURE ALGINATE-HYDROGEL IN CHRONIC HF

Alginate-hydrogel can be injected directly into the left ventricular wall in patients with heart failure, and this inert, permanent implant can form a prosthetic scaffold to modify the dimensions of the dilated ventricle. In the AUGMENT-HF trial, alginate-hydrogel injection was associated with improvements in symptoms and exercise capacity.

Investigators enrolled 78 patients (mean age 63 years, 74% in NYHA class III, left ventricular ejection fraction $26 \pm 5\%$) into the trial. Patients were randomly allocated to receive alginate-hydrogel plus standard medical therapy ($n=40$) or standard medical therapy only ($n=38$). Of the 40 patients randomly assigned to receive the alginate-hydrogel, two were found to have a left ventricular thrombus and three withdrew consent, and so did not undergo the procedure. Therefore, 35 patients received alginate-hydrogel injections, with no complications. Three deaths (8.6%) occurred in the alginate-hydrogel group within 30 days of the procedure, compared with none in the control group. At 6 months, six and three deaths had occurred in each group, respectively.

Alginate-hydrogel was associated with an improvement in the primary end point of peak VO_2 at 6 months compared with at baseline ($+1.24 \text{ ml/kg/min}$ versus control, 95% CI 0.26–2.23, $P=0.014$). Improvements also occurred with alginate-hydrogel versus control in the secondary end points of 6-min walking distance ($+141 \text{ m}$, $P<0.001$) and NYHA functional class (mean 0.9 classes, $P<0.001$).

Professor Stefan Anker, lead author on the trial report, believes that these findings “suggest potentially meaningful clinical benefits in the context of this new therapeutic approach of left ventricular reshaping”. The investigators are now planning larger randomized, controlled studies to validate the findings of the AUGMENT-HF trial. “Additionally, future studies will also refine delivery approaches for the alginate-hydrogel that improve on the safe delivery of the therapy (also using nonsurgical approaches) and facilitate broader patient populations with either less severe or more severe heart failure,” comments Professor Anker.

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Original article Anker, S. D. *et al.* A prospective comparison of alginate-hydrogel with standard medical therapy to determine impact on functional capacity and clinical outcomes in patients with advanced heart failure (AUGMENT-HF trial). *Eur. Heart J.* doi:10.1093/eurheartj/ehv259