心臓再生療法のトライアルが新たな知見をもたらす (Abstract 1299)

CHART-1：心臓形成幹細胞療法により、一部の心不全患者は恩恵をこうむる可能性がある

CHART-1: Cardiopoietic cell therapy may benefit a subgroup of patients with heart failure

うっ血性心不全患者において心臓形成療法（骨髄由来幹細胞を用いて心臓の修復を促進する治療）は、シャム手術に比べ一次転帰は改善しなかった。しかし、この研究により新たな知見が明らかにされた、とCHART-1トライアルの研究者らは2016年ESC Congressで発表した。特に、左室拡張末期容積が200～370 mLの患者群におけるサブグループ解析からは、この細胞療法の好ましい効果が示された。筆者らは、このサブグループの患者は心臓形成療法の恩恵をこうむる可能性があると考えている。

Full Text

A therapy that uses bone-marrow stem cells to promote heart repair did not significantly improve the primary outcome over a sham procedure among patients with congestive heart failure. However, it revealed critical new insights, according to investigators of the CHART-1 trial.

Although findings of CHART-1 (Congestive Heart Failure Cardiopoietic Regenerative Therapy) were neutral in the overall patient population, an exploratory analysis identified a sub-group of patients who may benefit from cardiopoietic cell therapy, according to the principal co-investigator of the study Jozef Bartunek, MD, PhD, from OLV Hospital Aalst, Belgium.

"Within a well-defined patient population, based on baseline heart failure severity, this therapy showed benefit," said Prof. Bartunek, who presented the findings at ESC Congress 2016. "Lessons learned from CHART-1 will now provide the foundation for the design of the ensuing CHART-2 trial which will target these patients."

Cardiopoietic cell therapy involves the isolation of mesenchymal stem cells from a patient's own bone marrow. Exposing these cells to a "cardiogenic cocktail" turns them into cardiopoietic cells that are then injected into damaged heart tissue.

The CHART-1 study randomized patients with symptomatic ischemic heart failure from 39 hospital centers in Europe and Israel.

Patients received either a sham procedure (n=151) or cardiopoietic cells (n=120).

At 39 weeks there was no significant difference between groups for the primary efficacy endpoint, which was a composite of all-cause mortality, worsening heart failure events, Minnesota Living with Heart Failure Questionnaire total score, 6-minute walk distance, left ventricular end-systolic volume and ejection fraction.

However, a subgroup analysis of patients with severe heart enlargement at baseline (left ventricular end-diastolic volumes between 200 and 370 mL) suggested a positive effect of the cell treatment over sham.

"Outcomes for all components of the composite endpoint, including mortality and worsening heart failure, were "directionally consistent" said Prof Bartunek, adding that "the effect was also related to clinically meaningful improved quality of life, greater 6-minute walk distance, and reduced left ventricular end-systolic volume for cell treatment versus sham."

In addition, "we observed a modifying effect of treatment intensity with suggestion of a greater benefit at lower number of injections," he added. "Overall safety was demonstrated across the study cohort, with no difference in adverse clinical outcomes observed between the groups."

Ongoing analyses will evaluate 12-month clinical outcomes, said Prof Bartunek. "Insights from the CHART-1 trial have implications for targeting the patient population that should be considered for cardiopoietic cell therapy in future clinical trials or for broader clinical considerations. More generally, indices of heart failure severity and optimized therapeutic intensity should be considered."

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Jozef Bartunek is a member of CVBA Cardiovasculair Onderzoek an institution which co-founded Cardio3Biosciences (currently Celyad). All consultancy/speakers fees and research contracts are directed to Cardiovasculair Onderzoek and Cardiac Research Institute, Aalst, BE.

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