ACC 22: Results from the GIPS-IV Trial

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Study Objectives

Dr van der Harst:This is a trial that we designed after a lot of experimental data that looked very promising. So there were cellular data from mice, from rats, from pigs, from dogs, that all looked very promising in the preservation of myocardial infarction.

Study Design and Patient Cohort

De Koning:The study was designed as a randomised, multicentre, placebo-controlled trial and the patients, 380 patients, were enrolled, presenting with a first STEMI and they had to have ongoing complaints and/or ST-deviation, directly after arrival at the cath lab. They were assigned to receive either sodium thiosulfate, twelve and a half grams intravenously, or matching placebo and they received a second dose six hours later.

Study Results

De Koning: We observed that the mean infarct size in the placebo group was 8.9%, in the sodium thiosulfate group, mean infarct size was 8%. So, we did not observe a reduction in infarct size between groups, between arms.

Take-home Messages for Clinicians

Dr van der Harst: Well, of course, the outcome was very disappointing but I think we still learned a lot. It is very difficult to design trials in the ischaemia reperfusion arena but it still has potential opportunities in other settings, for example, in the chronic heart failure or other conditions that have been tested experimentally but it shows us just how difficult it is to translate animal experimental findings to real clinical benefits.

Further Study Recommendations

Dr van der Harst: So, further studies in the acute setting. In the Netherlands, the STEMI network is so efficient that patients are presenting within 90 minutes on efforts, so the average infarct size was also below 9%. So, we don't know whether this might be beneficial when they're presenting at a later time, when there is more, longer duration of ischaemia. And we also do not know whether it might be beneficial in long-term treatment.