Factors associated with early catheterization in patients randomized to the conservative strategy in the ISCHEMIA Trial

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Background

In the ISCHEMIA trial, individuals randomized to the conservative strategy (CON) could undergo coronary catheterization (cath) for suspicion of an endpoint event, persistent symptoms despite guideline-directed medical therapy (GDMT), or through protocol non-adherence. Understanding the reasons for cath in CON participants can aid in ISCHEMIA results interpretation.

Purpose To describe the frequency of and factors associated with early cath.

Methods

A prespecified, post-hoc analysis of the 2591 CON participants was performed with multivariable analyses to identify independent factors associated with cath within 6 months of randomization ("early cath").

Results

Overall, 8.7% of CON participants underwent an early cath: with 4.7% for a suspected endpoint event, 1.7% for medical treatment failure, and 2.6% for protocol non-adherence; cath rate within the first 3 months from randomization was 5.8%. The Table presents factors significantly associated with early cath by the Proportional Subdistribution Hazard (PSH) Model of Fine and Gray including following covariates: age, sex, region of randomization, diabetes, smoking, kidney function, blood pressure, LDL-C, ischemia severity, coronary disease severity, number of antianginal medications used, medications adherence and SAQ scores assessed at randomization as well as changes in SAQ angina frequency score and number of antianginal medications use during FU.

Covariate	HR (95% CI)
Region: Europe vs. Asia (HR for the first 3 months)	*1.83 (1.15, 2.9)*
Baseline LDL < 70 mg/dL	*0.65 (0.46, 0.91)*
Daily angina on SAQ angina frequency score (HR for the first 3 months)*	*5.84 (2.73, 12.47)*
Weekly angina on SAQ angina frequency score (HR for the first 3 months)*	*2.64 (1.52, 4.58)*
SAQ quality of life score category: 0-24 vs. 75-100 (HR for the first 3 months)*	*2.02 (1.03, 3.95)*
SAQ quality of life score category: 25-49 vs. 75-100 (HR for the first 3 months)*	*2.03 (1.24, 3.33)*
New or more frequent angina within 3 months prior to randomization	*1.79 (1.33, 2.39)*
Change in the SAQ Angina Frequency Score from baseline (HR in units of 10)	*0.65 (0.6, 0.71)*
Change in the number of anti-anginal medications being taken from baseline	*1.45 (1.06, 1.98)*

Table. Multivariable model presenting factors significantly associated with the risk of early cath

* Due to violation of the proportional hazards assumption, HRs respecting interactions with time were used

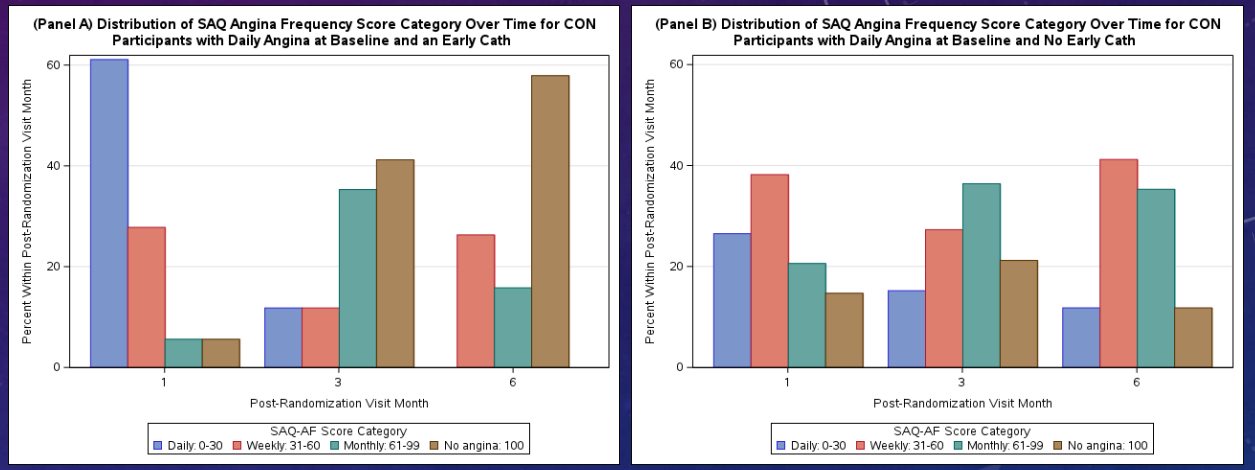

Figure Changes to SAQ angina frequency score during the first 6months FU in patients who received a cath (panel A) and those without cath (panel B)

Conclusions

The rate of early cath in the ISCHEMIA CON strategy was low and driven mainly by a suspected endpoint event. Severe/moderate baseline angina and quality of life impairment were independently associated with very early cath. Chances of early cath were greater with worsening pre-randomization angina and need for additional antianginal medication, and less with well controlled baseline LDL-C and decreasing angina pattern during FU. The baseline severity of ischemia or extent of disease on coronary imaging were not related to early cath. These results give important insight into the conservative management of stable coronary disease and point to the efficacy of GDMT in reducing the need for cath.

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