THE PHENOMICS OF CHRONIC POSTSURGICAL PAIN FOLLOWING CARDIAC SURGERY

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INTRODUCTION / AIM

It has been reported that up to 40% of patients develop chronic postsurgical pain following cardiac surgery. In this study, we sought to investigate the phenomic differences among patients that developed chronic pain post-cardiac surgery.

METHODS

A REB-approved, cross-sectional phenomic study of post-cardiac surgery pain was conducted at Toronto General Hospital from 2011 to 2015. 634 patients consented to participate and completed a short survey that included pain scores and the short-form McGill Pain Questionnaire-2. Of these patients, 367 completed a longer series of 9 validated pain phenomics questionnaires. 207 patients completed psychophysical assessments (e.g., thermal QST, pressure algometry, cold pressor, thermal grill). Patients were stratified by chronic pain status and analyzed using descriptive statistics.

RESULTS

Mean time post-surgery for the cohort was 41.5 weeks. 27.44% of patients reported chronic postsurgical pain. Patients reporting previous chronic pain were more likely to have chronic postsurgical pain. Of the 174 patients that reported chronic postsurgical pain 1% reported mild, 78% reported moderate, and 21% reported severe pain using a chronic pain index (CPI). These patients also reported significantly greater scores on phenomic scales and subscales for anxiety, fear, pain catastrophizing, and depression across 9 validated questionnaires. Psychophysical assessments demonstrated lower forearm thermal pain and sensory thresholds (p < 0.036), increased cold pressor pain rating (p < 0.0013), and lower baseline systolic vasoconstrictor inspiratory gasp (p < 0.027).

DISCUSSION / CONCLUSIONS

Phenotyping questionnaires and psychophysical tests directly correlate with the presence of chronic pain after cardiac surgery. This work will inform future genome-wide association studies on chronic postsurgical pain.

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