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Chronic pain evaluation in older patients after cardiac surgery : A survey-based delayed follow-up study

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WHY THIS MATTERS

Chronic post-sternotomy pain affects 20–80% of adult cardiac surgical patients and worsens sleep, mood and daily function. Acetaminophen spares opioids acutely, but its effect beyond three months is unknown.

METHODS

1. Surveyed the 120 participants of a randomized, placebo-controlled trial of scheduled intravenous acetaminophen, 3-6 years after CABG and/or valve surgery.
2. Opt-out letter and telephone call, then a secure REDCap link for consent and the survey.
3. Pain at three months and at survey on an 11-point scale, opioid use and ADL limitation; demographical characteristics of responders compared with non-responders

RESULTS

- **38 of 120 responded** (32%); 24 of them (63%) had preoperative chronic pain
- **Overall chronic pain 16%**, similar by group at three months: 3/18 (16.6%) vs 3/20 (15.0%)
- **At survey** 2 placebo patients (10%) had pain, none on acetaminophen (p = 0.49)
- **No responder** reported opioid use; 1 patient per group had ADL limitation

LIMITATIONS

32% response rate; men were more likely to respond (95% vs 81%, p = 0.044); three-month pain was recalled retrospectively; two events cannot support a treatment claim.

One in six still had sternotomy pain at three months - and acetaminophen did not change that

38 trial participants surveyed 3 to 6 years later: 2 still had pain, none were using opioids

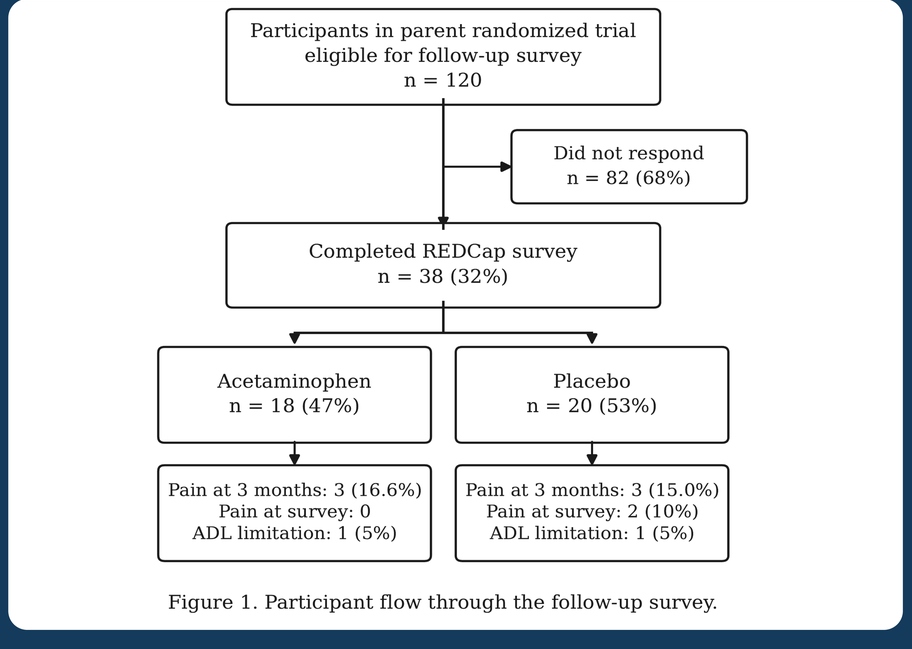


Figure 1. Participant flow through the follow-up survey.

Scan for the parent trial

DEXACET, JAMA 2019;321:686-696

Approved by the BIDMC Committee on Clinical Investigations (protocol IRB 2020P000932); electronic informed consent obtained from all participants.

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THE DETAILS

Who responded

Table 1. Baseline characteristics of survey responders and non-responders.

Characteristic	Non-responders (n = 83)	Responders (n = 38)	p-value
Age, median (IQR), y	74 (68-80)	71 (68-80)	0.3
Acetaminophen group, n (%)	41 (49)	18 (47)	0.5
Male sex, n (%)	67 (81)	36 (95)	0.044
White race, n (%)	78 (94)	35 (92)	0.4
Hispanic or Latino, n (%)	2 (2.4)	1 (2.6)	>0.9
Preoperative chronic pain, n (%)	43 (52)	24 (63)	0.2

Responders completed the survey; non-responders did not. Wilcoxon rank-sum test, Pearson chi-square test, or Fisher exact test as appropriate. IQR, interquartile range.

Outcomes by group

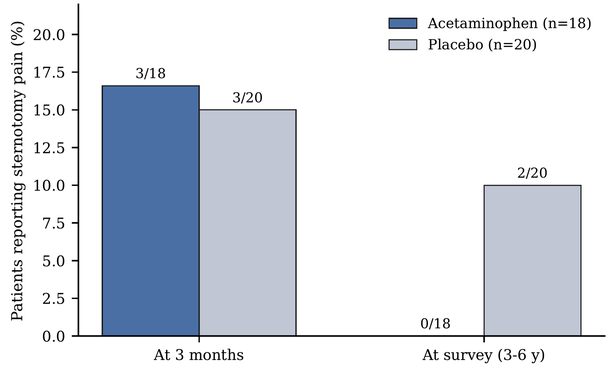
Table 2. Incidence of post-sternotomy pain and effect on activities of daily living, by treatment group.

Group	Responders n (%)	Pain at 3 months, n (%)	Pain at survey (3-6 y), n (%)	Limitation of ADL, n (%)
Acetaminophen	18 (47)	3 (16.6)	0 (0)	1 (5)
Placebo	20 (53)	3 (15.0)	2 (10)	1 (5)

Percentages are computed within each treatment group. ADL, activities of daily living. With two events at the time of survey, the between-group difference was not formally tested.

Pain by treatment group

Figure 2. Incidence of post-sternotomy pain by treatment group



1. Zubrzycki M, et al. J Pain Res. 2018;11:1599-1611.
2. Hilleman DE, et al. Pain Med. 2020;21:3301-3313.
3. Subramaniam B, et al. JAMA. 2019;321:686-696.
4. Wu MJ, et al. Comput Human Behav Rep. 2022;7:100206.
5. Liu Z, et al. Br J Anaesth. 2022;129:366-377.