

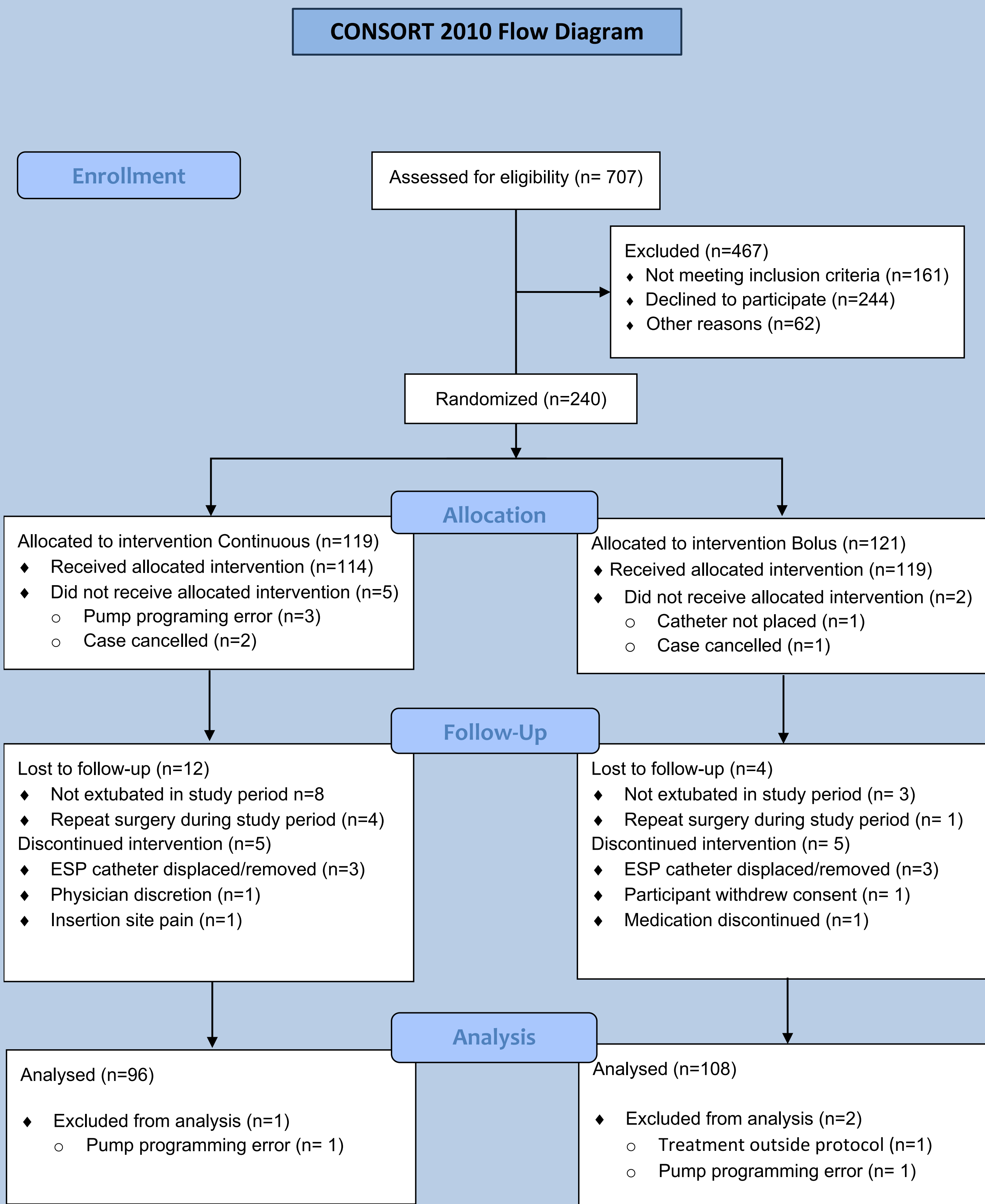
INTRODUCTION

- Uncontrolled pain can worsen postoperative outcomes in adults undergoing open-heart surgery.
- Erector spinae plane (ESP) analgesia via indwelling ESP catheters decreases postoperative opioid consumption.
- **The optimal method of local anesthetic administration remains unknown.**
- **Hypothesis:** The use of programmed intermittent boluses results in superior postoperative analgesia compared to continuous infusion of local anesthetics through ESP catheters after cardiac surgery.

Table 1. Demographics of the 204 patients completing the study

Variable	Mean or N	Standard deviation or (%)	Mean or N	Standard deviation or (%)	Standardized difference
Sex					0.039
Male	71	(74.0)	78	(72.2)	
Female	25	(26.0)	30	(27.8)	
Race					0.486
White	78	(81.2)	73	(67.6)	
Black	11	(11.5)	22	(20.4)	
Other	1	(1.0)	6	(5.6)	
Do Not Know	2	(2.1)	5	(4.6)	
Declined	1	(1.0)	2	(1.9)	
Asian	3	(3.1)	0	(0.0)	
Ethnicity					0.330
Not Hispanic	80	(83.3)	97	(90.7)	
Do Not Know	10	(10.4)	3	(2.8)	
Decline	3	(3.1)	5	(4.7)	
Hispanic	3	(3.1)	2	(1.9)	
Chronic pain					0.071
No	74	(86.0)	86	(83.5)	
Yes	12	(14.0)	17	(16.5)	
Case sequence	122.4	70.1	120.5	69.3	0.027
Age (years)	65.3	10.5	64.2	10.4	0.104
Body mass index (kg/m ²)	29.5	5.2	29.2	5.8	0.048
Quality of Recovery-15 baseline	127.5	17.6	125.8	19.7	0.089
Maximum chest tubes postoperatively	2.35	0.85	2.30	0.94	0.065

Programmed intermittent bolus dosing of ESP catheters for
postoperative analgesia following open-heart surgery was not
superior to continuous infusion to reduce early postoperative opioid
consumption.



- The intermittent bolus group had an estimated 1.08-fold greater oral morphine milligram equivalent (OMME) than the continuous infusion group (95% confidence interval 0.90 to 1.31, P = 0.40).
- The mean difference was 4.1 OMME larger per day for the intermittent bolus group (95% confidence interval -5.6 to +13.8 mg).
- There were no significant differences between groups in postoperative pain intensity, quality of recovery, & measures of nausea and constipation.

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METHODS

- **Study:** IRB-approved, single-center, parallel-group, randomized, double-blind control trial (NCT05642416).
- **Population:** Adults, open-heart surgery, midline sternotomy, scheduled ESP analgesia with 0.2% ropivacaine via **ambIT® PIB-IL** infusion pump (Avanos Medical, Inc, Alpharetta, GA).
- **Intervention:** Programmed intermittent bolus of **30mL Q3 hrs.**
- **Comparison:** Continuous infusion at **10ml per hour.**
- **Primary Outcome:** Mean postoperative opioid consumption at 72 hours in OMME.
- **Secondary Outcomes:** Postoperative pain, length of stay (ICU & hospital), quality of recovery, nausea, and constipation (indirectly).



Full
Abstract