

INTRODUCTION

- Breast surgery is an important treatment for breast cancer but can be associated with significant post-operative pain.
- Effective regional anesthesia with multimodal analgesia is essential to enhance recovery.
- Anatomical studies suggest that combining deep serratus anterior block (SAB) with parasternal intercostal plane (PIP) block provides broader neural coverage of the chest wall.

OUTCOMES

- 1
- Determine if SAB & PIP blocks with GA shortens time to recovery compared to GA & wound infiltration.
- 2
- Assess effects on pain, opioid use, recovery time, quality of recovery, adverse events, patient satisfaction, and chronic postoperative pain.

METHODS

- Prospective, double-blinded, randomized control trial at a single site academic hospital.
- Patients: female, age 18-80, ASA I-III, undergoing unilateral ambulatory breast surgery.

	Study Group	Control Group
Preop	20mLs 0.5% Ropivacaine unilateral SAB block US guided & 20mLs 0.5% Ropivacaine unilateral PIP block US guided	40mLs saline in SAB and PIP distributions under US guidance
Intraop	40mLs saline local wound infiltration by surgeons	40mLs 0.5% Ropivacaine local wound infiltration by surgeons

Combined SAB & PIP blocks resulted in shorter PACU Stage I recovery time compared to wound infiltration alone, without affecting overall discharge time, pain scores, opioid usage, or quality of recovery.

Table 1: Demographic and Surgical Patient Data

Demographics	Group 1 Study Group (n=29)	Group 2 Control Group (n=24)	P value
Age (mean±SD, years)	55.45±12.53	60.38±14.98	0.2064
ASA II n(%)	14 (48.28%)	5 (20.83%)	0.0481
ASA III n(%)	15 (51.72%)	19 (79.17%)	
Lumpectomy n(%)	15 (51.72%)	14 (58.33%)	0.7826
Simple Mastectomy n(%)	14 (48.28%)	10 (41.67%)	

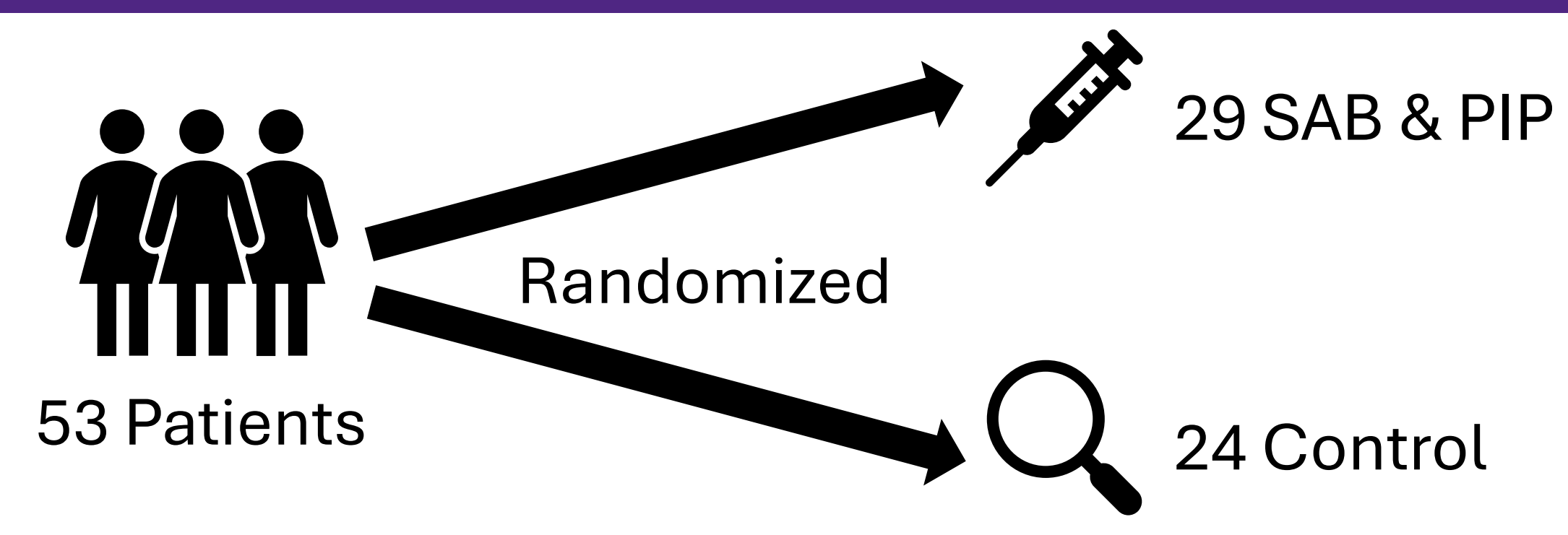
Table 2: Perioperative Analgesic and Recovery Outcomes

Outcomes	Group 1 Study Group (n=29)	Group 2 Control Group (n=24)	P value
PACU Stage I Pain Score median (IQR)	3 (0 – 5)	1 (0 – 5)	0.3846
PACU Stage II Pain Score median (IQR)	3 (1 – 3)	3 (1 – 3)	0.9752
Discharge Pain Score median (IQR)	2 (1 – 3)	2 (1 – 3)	0.4938
PACU Stage I Opioid Consumption (IV MME) (mean±SD, mg)	1.83±1.73	2.18±2.21	0.5181
PACU Stage II Opioid Consumption (IV MME)	1.67mg x 1 patient	3.3mg x 1 patient	
Side Effects Needing Treatment PACU Stage I n(%)	22 (75.86%)	19 (79.17%)	0.9999
Side Effects Needing Treatment PACU Stage II n(%)	8 (27.59%)	5 (20.83%)	0.7503
Total Recovery Time (mean±SD, minutes)	138.2±58.39	158.1±65.57	0.2485
PACU Stage I (mean±SD, minutes)	54.82±30.53	78.74±42.27	0.0232
PACU Stage II (mean±SD, minutes)	88.36±39.22	86.26±39.01	0.8498

Table 3: Patient Reported Quality of Recovery Scores

Quality of Recovery Elements	Group 1 Study Group (n=29)	Group 2 Control Group (n=24)	P value
Feeling rested at 24 hours post-operative	10 (7 – 10)	7 (5 – 9)	0.0271
Total QOR-15 score median (IQR)	137 (128 – 145)	135 (116 – 142)	0.2525
Persistent discomfort or pain at 3 months in the area of surgery n(%)	2 (6.9%)	1 (4.17%)	0.9999

RESULTS



- Total recovery time was similar between the two groups, but PACU Stage I recovery time was significantly shorter in the study group (P < 0.05).
- QoR scores were similar overall between groups, but patients receiving blocks reported feeling more rested at 24 hours post-op (P < 0.05).
- Baseline patient and clinical characteristics did not exhibit a difference between the two groups.
- Pain scores (PACU Stage I and II and at discharge) and opioid consumption were also comparable between groups.
- Adverse events requiring treatment did not differ in incidence between both groups.
- Chronic pain incidence was rare and similar between groups.

CONCLUSION

Combined SAB & PIP blocks shorten early PACU recovery after ambulatory breast surgery without impacting overall discharge time, pain scores, or opioid use.

REFERENCES

Biswas A, Hang VP, Newmarch W, et al. Spread of Injectate After Combined Deep Serratus Anterior and Superficial Parasternal Intercostal Plane Injections: A Cadaver Study to Evaluate Their Utility in Breast Surgery. *Acta Anaesthesiol Scand*. 2025;69(10):e70134. doi:10.1111/aas.70134