

Introduction

- Patients with congenital bleeding disorders (CBDs) frequently require orthopedic procedures due to recurrent hemarthrosis and progressive joint deterioration.¹
- The prevalence of chronic pain in this population is as high as 84%.²
- Despite factor replacement prior to surgery, regional anesthesia (RA) may be avoided due to risk of hematoma.
- To this point, literature regarding RA in patients with CBDs is limited to case reports.

Methods

- A retrospective cohort analysis (ongoing) of patients with CBDs having any orthopedic surgery between 2017-2022.
- Due to a wide variety of procedure types in the initial data, patients specifically having arthroplasty were grouped for secondary analysis.
- Pain scores were analyzed based on central distribution (mean, standard deviation) and opioid requirements were analyzed based on skewed distribution (median, interquartile range).

No block (MME)

40	23	13	2	5	1
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No Block Pain Scores

6	22	31	19	42	19
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Block (MME)

22	18	7	1	1
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Block Pain Scores

9	14	26	9	6
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Primary Outcome

- Of 60 total patients identified, 17 (28%) patients received PNB and 43 (72%) did not. The two groups had similar characteristics (Table 1).
- There were no complications in the block group (n=17), including hematoma.

Table 1. Demographics and clinical characteristics (n = 60)

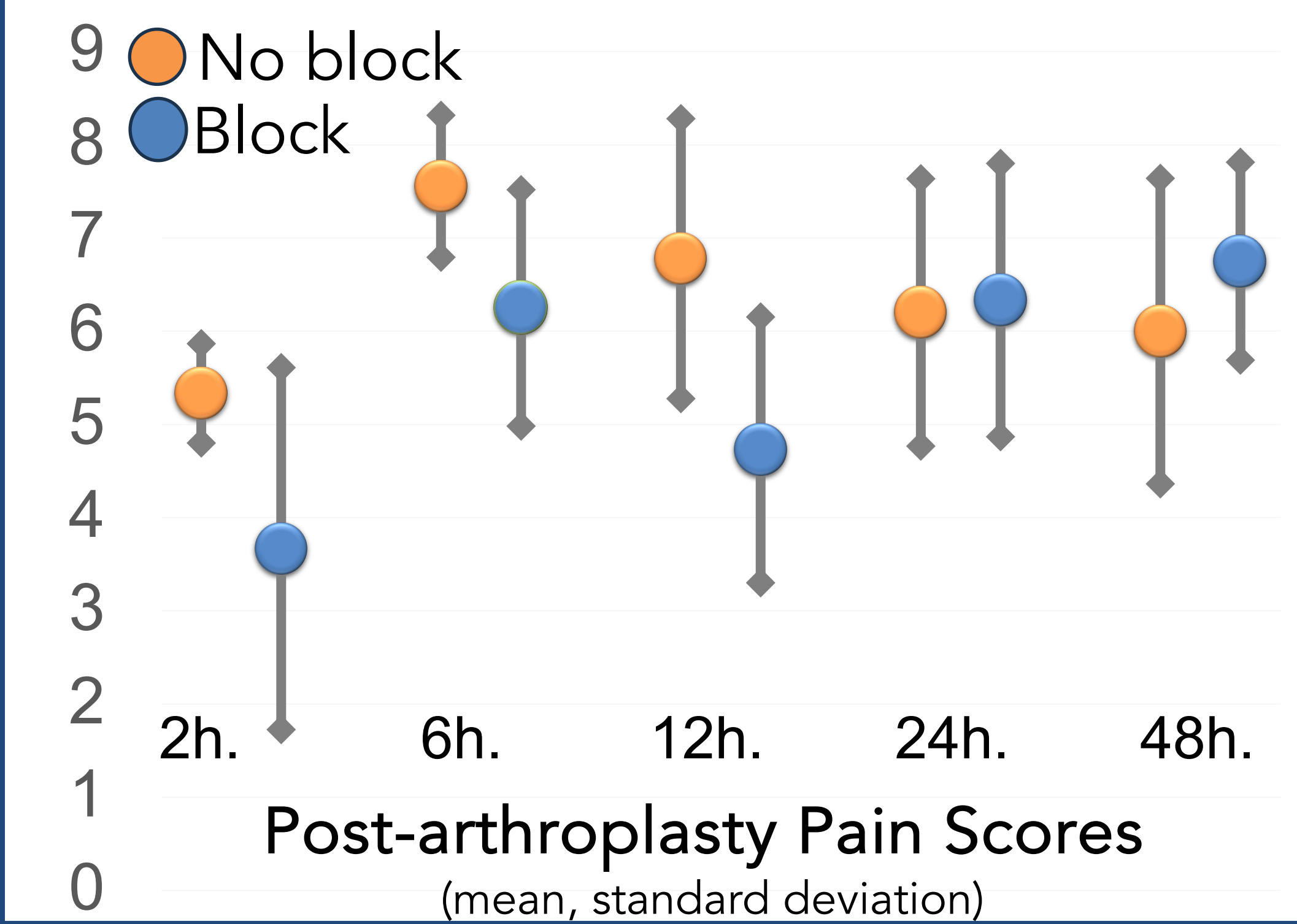
Characteristic	Block (n = 17)	No block (n = 43)	P value
Age, median (IQR)	35 (32-49)	36 (27-54)	0.8
Weight, mean ± SD	89.3 ± 26.6	85.9 ± 24.6	0.64
BSA, mean ± SD	2.1 ± 0.5	2.5 ± 3.4	0.43
Male gender, n (%)	13 (76.5%)	38 (88.4%)	0.26
Diagnosis, n (%)			0.16
Hemophilia A	12 (70.6%)	20 (46.5%)	
Hemophilia B	2 (11.8%)	15 (34.9%)	
Other	3 (17.7%)	8 (18.6%)	

Secondary Outcomes

- There was no statistically significant difference in pain scores or opioid requirements between block groups and non-block groups.
- Following arthroplasty (n=22), patients who received PNB (n=12) had lower pain scores in the first 12 hours (not statistically significant).
- All arthroplasty patients with baseline opioid requirement (n=4, fentanyl patch or methadone) having arthroplasty received peripheral nerve block.

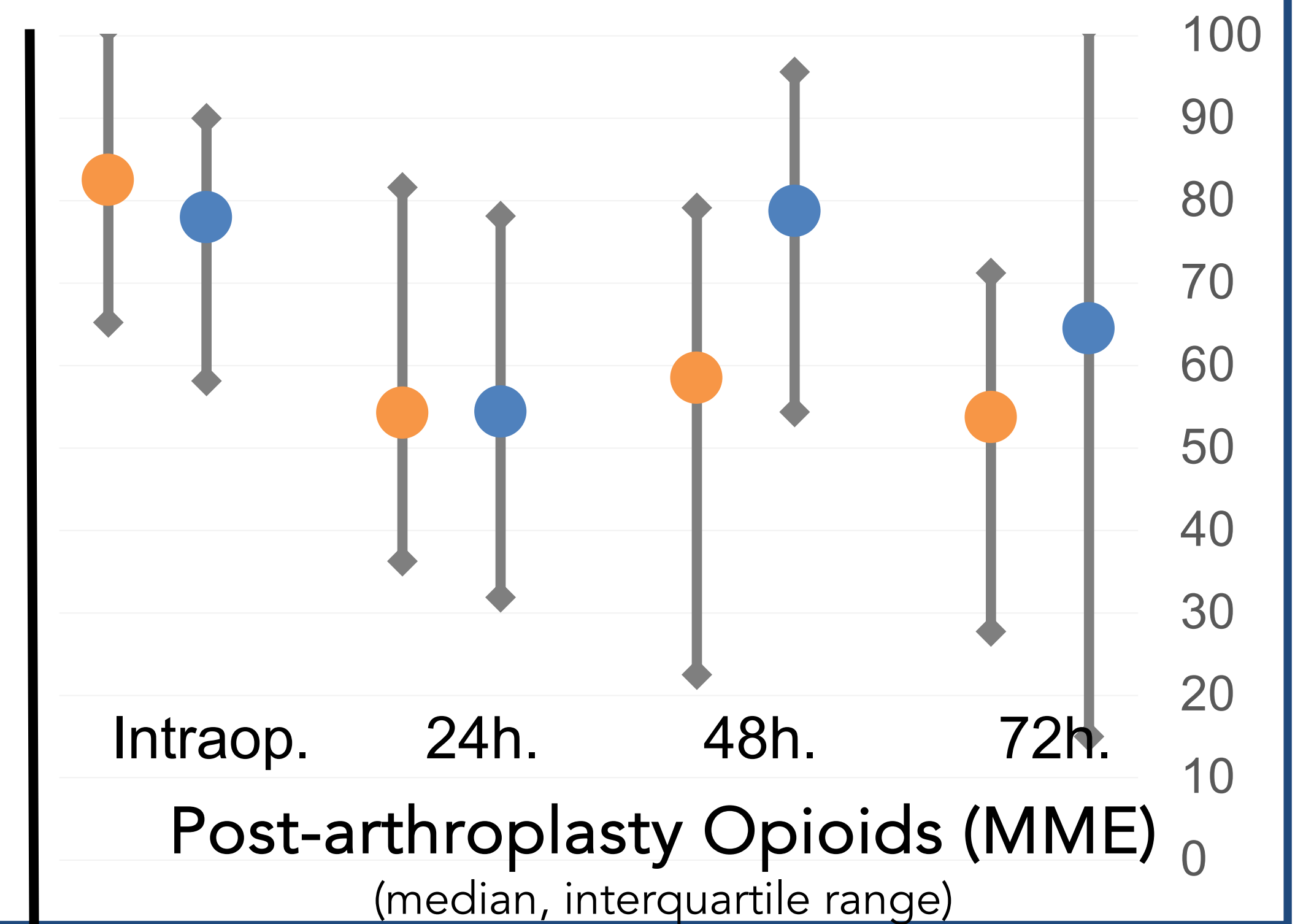
Post-arthroplasty Pain Scores

(mean, standard deviation)



Post-arthroplasty Opioids (MME)

(median, interquartile range)



Discussion

- PNBs were performed within four hours of pre-operative factor replacement by fellowship trained faculty. Multidisciplinary coordination with the hematologist and surgeon is imperative.
- Rebound pain was more clinically significant in patients with chronic pain.
- Perineural catheters may be contraindicated due to return of coagulopathy following surgery.³
- Ultrasound-guided cryoneurolysis (USGPC) may offer prolonged analgesia and prevent rebound pain in this patient population. (Gosey et al., ASRA 2024)

Conclusion

- Regional anesthesia procedures should be considered for patients with congenital bleeding disorders.
- When there is a high risk of rebound pain, ultrasound-guided percutaneous cryoneurolysis may be preferred.

References:

- Vanarase MY, et al. Pain relief after knee replacement in patients with a bleeding disorder. Hemophilia 2007; 13; 395-7.
- Paredes AC, et al. Prevalence and interference of chronic pain among people with hemophilia: A systematic review and meta-analysis. The Journal of Pain 2021; 22; 1134-45.
- Poston JN, Kruse-Jarres R. Perioperative hemostasis for patients with hemophilia. Hematology Am Soc Hematol Educ Program. 2022 Dec 9;2022(1):586-593. doi: 10.1182/hematology.2022000387. PMID: 36485165; PMCID: PMC9820308.