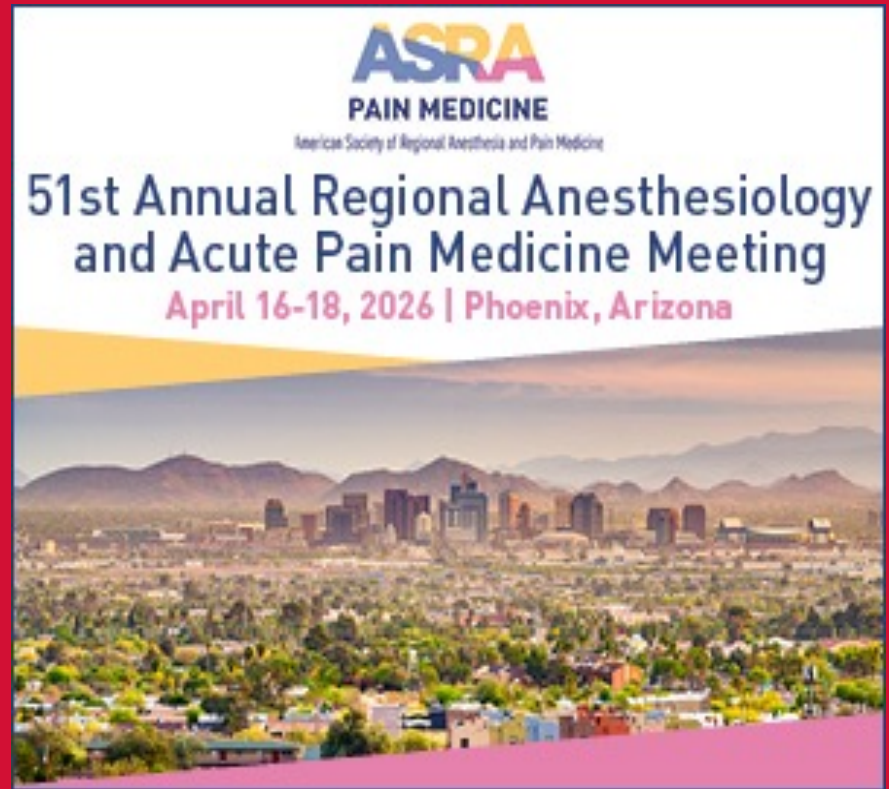




INTRODUCTION

Management of vaso-occlusive crises and chronic pain in Sickle Cell Disease (SCD) relies heavily on opioid therapy. Although full opioid agonists provide effective acute analgesia, long term use is associated with tolerance, dose escalation and adverse effects [1].

Buprenorphine, a partial μ -opioid agonist with favorable safety profile, may offer effective pain relief with fewer complications.

This review evaluates buprenorphine as an alternative strategy for pain management in SCD patients.

MATERIALS & METHODS

Literature search conducted following PRISMA guidelines:

- Search strategy used controlled and relevant keywords to identify studies evaluating partial opioid agonists for pain management in SCD.
- Data bases searched included PubMed, MEDLINE, Embase, and the Cochrane Library.

Eligible studies: evaluating partial opioid agonists for the management of acute and chronic pain in SCD patients.

Excluded studies: no original clinical data, pediatric populations and studies focused only on full opioid agonists

RESULTS

Seventy manuscripts were identified; 63 studies were excluded based on predefined criteria (Figure 1).

Across four studies, patients receiving chronic high-dose full μ -opioid agonist reported persistent pain intensity scores greater than 7/10, indicating poorly controlled pain.

- One study highlighted physical and cognitive side effects with prolonged opioid therapy [2].

After initiation of buprenorphine, the four retrospective studies reported a decrease in the number of emergency room visits [range post transition: 10.5 to 2.89, 9.1 to 4.2 visits] and a reduced length of stay [5.8 to 2.8 days] among the SCD patients with overall reduced health care utilization.

- In the interview study, several patients reported satisfactory pain control, a clearer mental state, and an improvement in their interpersonal relationships [2].

Most participants endorsed the transition from full opioid agonists to buprenorphine at the end of the studies.

No adverse effects were reported in this protocol. Here is a proposed transition regimen (Table 1).

Figure 1: PRISMA Flowchart

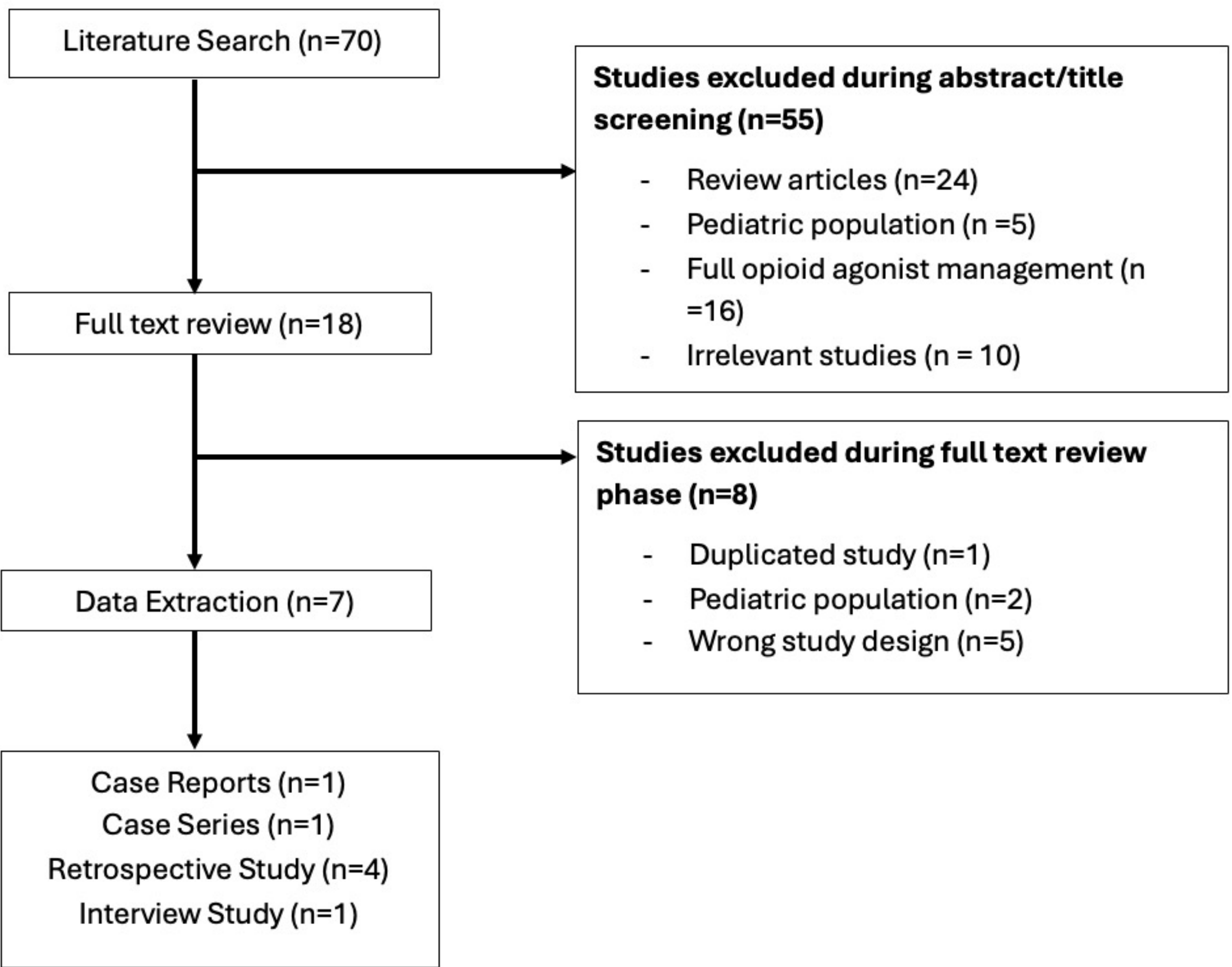


Table 1: Protocol Regimen

Day	Oral Buprenor phine (mcg)	Buprenorphine / Naloxone (mg)	Total Daily Dose of Oral Buprenorphine	Full Agonist
1	150 – 1 film daily	0	150 mcg	Continue
2	150 – 1 film BID	0	300 mcg	Continue
3	450 – 1 film daily	0	450 mcg	Continue
4	STOP Belbuca	2 mg daily	N/A	Continue
5	0	2 mg BID	N/A	Continue
6	0	4 mg BID	N/A	Continue
7	0	12 mg daily	N/A	Continue
8*	0	Up-titration	N/A	STOP

Suggested protocol regimen for the transition to buprenorphine for pain management in patients with SCD

*Initiate buprenorphine extended release on day 8

DISCUSSION

This review highlights buprenorphine as a potential alternative to full μ -opioid agonists for pain management in patients with sickle cell disease.

Transitioning to buprenorphine was associated with a decrease in the number of emergency room visits, reduced length of stay, and better psychosocial environment and cognitive outcomes indicative of a reduced health care utilization both acute and chronic.

Take Away Lessons

Buprenorphine is a promising alternative in SCD pain management and can be used in the establishment of transition guidelines with this suggested protocol that can reduced severity of opioid withdrawal.

Many participants endorsed the transition from full opioid agonists and had significant improvements in their quality of life.

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