



Evaluating Buprenorphine as an Alternative to Opioids for Chronic Pain Management in Sickle Cell Disease: A Scoping Review

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Introduction

- Despite concerns about side effects and tolerance, high doses of short-acting opioid agonists continue to be commonly prescribed for pain management, leading to opioid dependence, increased acute care use, and greater strain on healthcare resources.
- This scoping review explores the potential of buprenorphine, a partial opioid agonist, as a promising alternative for managing chronic pain in patients with sickle cell disease (SCD), particularly those with opioid use disorder.

Methods

- Following the registered protocol on OSF (doi.org/10.17605/OSF.IO/7D4GS), we conducted a scoping review following PRISMA guidelines to explore the use of buprenorphine in managing SCD-related pain. We included English-language studies on adults up to March 2023.
- Data from multiple databases were assessed by two reviewers, focusing on study type, participant demographics, pain management strategies, and outcomes related to hospital admissions.
- Since only published data was used, IRB approval was not required.

Our review suggests that the partial mu-agonist buprenorphine offers a promising alternative to traditional mu-agonist opioid medications, with evidence pointing its potential for reducing the amount of traditional opioids needed during disease crisis, improving quality of life, and managing chronic pain more effectively in patients with SCD.

Proposed protocol for transitioning to buprenorphine from full opioid agonist therapy.

Day	Buccal Buprenorphine (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

*Will initiate buprenorphine extended release on day 8.

Further research is needed to confirm these findings and establish standardized treatment protocols.

Results

- A total of 7 studies met inclusion criteria and underwent qualitative analysis. Among the included studies four were retrospective, one was a case report, and one was an interview study
- These studies involved 473 patients, predominantly African American females (median 68%), with a mean age of 34.4 years.
- Transition protocols often required complete discontinuation of full opioids before initiating buprenorphine, with some studies recommending a mild withdrawal phase.
- Buprenorphine dosing ranged from 2-4 mg sublingually initially, adjusted based on withdrawal symptoms, with higher doses (≥16mg daily) linked to improved adherence.
- Buprenorphine use led to significant reductions in emergency department visits (from 9.1 to 4.2 per year) and hospital stays (from 5.8 to 2.8 days).

References

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