KAP STUDY

Pain in sickle cell diseases; physicians' knowledge, attitude, and barriers: A cross sectional study

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Abstract

Objective: To assess the status of acute pain management in sickle cell disease patients, and to explore the association between professional experience and therapeutic preferences among the physicians for the management of sickle cell disease-related acute pain management.

Method: The cross-sectional study was conducted from June to September 2018 and comprised physicians from 20 hospitals across Saudi Arabia. Data was collected using a 13-item survey form investigating physicians' general information and related barriers regarding acute pain management in sickle cell disease patients. Data was analysed using SPSS 25.

Results: Of the 300 individuals approached through emails, 201(67%) responded. There were 122(61%) males and 78(39%) females; 126(63%) had experience <5 years, while 41(20%) had experience >10 years; the largest group of physicians belonged to Internal Medicine 46(23%); 41(20.4%) came across sickle cell disease patients 'very often' and 31(15.4) had never come across such a patient. There was no significant association between professional experience and therapeutic management preferences ($p>0.05$).

Conclusion: Physicians' knowledge, attitude and practice related to acute pain management in sickle cell disease patients was adequate. More awareness is needed for optimal management of pain in such patients.

Keywords: SCD, Sickle cell disease, Opioids, Acute pain, Physicians. (JPMA 72: 2043; 2022)

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Introduction

Sickle cell disease (SCD) is an autosomal recessive disorder characterised by the production of abnormal haemoglobin S.[1] The disease is associated with high morbidity and mortality.[1] SCD is a common genetic disease in Saudi Arabia, with the highest prevalence in the Eastern province, followed by the Southwestern provinces.[2] Several SCD-related complications, such as stroke, seizure, iron overload, and acute pain associated with acute vaso-occlusive crisis (AVOC) and acute chest syndrome (ACS) require frequent hospital admissions.[1] The ACS and AVOC are the two majors painful SCD complications that require urgent and effective medical management. However, despite being a common disorder, there is limited information on overall mortality from SCD in Saudi Arabia. The available report of hospital-based studies from the Eastern province shows that 73% of patients aged $\leq$30 years with SCD died due to complications mostly related to ACS and infections.[2] A retrospective study showed that AVOC was a common cause of hospital admission, with 30.2% of such patients presenting with an acute painful crisis, and 52% of the patients were prescribed narcotics, with 11% of them reportedly being narcotic-dependent.[3]

The American Society of Haematology (ASH) guideline on SCD recommends that the SCD-related painful VOC should be treated primarily with an analgesic agent, typically opioids.[4] Evidence has shown that appropriate management of SCD-related painful VOC could prevent comorbid conditions and hospitalisations.[5]

Although opioids were considered the mainstay in the management of SCD acute pain, several studies also reported the use of nonsteroidal anti-inflammatory drugs (NSAIDs).[6] Although conflicting evidence exists in literature regarding the use of NSAIDS in SCD-related pain, ASH guideline suggests NSAIDS' use in the management of mild to moderate pain or as an adjuvant for opioids in severe pain.[4] A study has demonstrated that some clinicians prefer prescribing NSAIDS to patients to avoid adverse effects related to tolerance, physical dependence, confusion and addiction to opioid use.[6] A study in Saudi Arabia found that the frequent SCD-related emergency department (ED) utilisation, defined as 3 or more SCD-related ED visits within a 6-month period, was highly prevalent in Saudi population (64.3%).[7] While some studies in Saudi Arabia focussed on the perspectives of patients and their families about SCD pain management,[8,9] no such

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information is available from the physicians who managed these patients. To date, different opinions exist among the physicians in Saudi Arabia regarding pain management in patients with SCD, and the issue is not widely discussed in local medical practice. The current study was planned to assess the status of acute pain management in SCD patients in Saudi Arabia, and to explore the association between professional experiences and therapeutic preferences among the physicians for the management of SCD-related acute pain management.

Subjects and Methods

The cross-sectional study was conducted from June to September 2018 and comprised physicians from 20 hospitals representing all the five geopolitical zones of Saudi Arabia. After approval from the unit of Biomedical Ethics research committee at King Abdulaziz University, the sample size was calculated using an online calculator.[10] As there was no relevant literature available, frequency of outcome variable was taken as 50% with 95% confidence interval (CI) and 5% margin of error. The sample was raised from among physicians of either gender who were directly involved in the management of patients with SCD working as consultants, specialists, residents and interns in the departments of Internal Medicine, Surgery, Emergency, Intensive Care, Paediatrics and Pain Management.

The eligible participants were approached through emails. The mail list was obtained from hospitals' directories. The list was stratified based on the province where the hospitals were located. The survey questionnaire in Microsoft format was sent on the relevant email addresses. The questionnaire contained the study information, aims, survey questions, confidentiality, ethical conduct, and a consent form. Consent in this study was implied by completing the survey. Those who did not respond were excluded. Data was collected related to gender, years of experience, area of specialty, and frequency of participation in SCD acute pain management.

The survey questionnaire was developed based on literature review.[11-13] The draft questions were presented to subject experts on the subject matter. Five experts were selected based on convenience. They were asked to review and provide feedback. The draft questionnaire was then pretested on 10 physicians from the target population. The questionnaire was modified based on the feedback received from the experts and the pre-test. The final survey questionnaire consisted of 13 items (Appendix).

Appendix: Survey Questions.

Participant Demographics:

Gender: μ Male μ Female

Age: _____ Years

Years of Experience:

- ❍ Less than five years
- ❍ 5-10 years
- ❍ More than ten years

Medical Title:

- ❍ Intern
- ❍ Resident
- ❍ Fellow
- ❍ Specialist
- ❍ Consultant
- ❍ Other

Specialty:

- ❍ Internal medicine
- ❍ Haematology/oncology
- ❍ Intensive care
- ❍ Emergency medicine
- ❍ Rheumatology
- ❍ Pain management
- ❍ Others

Have you ever managed a SCD pain crisis?

- ❍ Yes
- ❍ No

If your answer was YES, then how frequently do you participate in the management of SCD pain crisis?

- ❍ Always
- ❍ Very often
- ❍ Sometimes
- ❍ Rarely

Based on your experience, please rate the following on a scale of 1-5

(1 = Strongly agree, 2 = Somewhat agree, 3 = Neutral, 4 = Somewhat disagree, 5 = Strongly disagree)

Vaso-occlusive pain is the most common type of acute pain in patients with SCD

Addiction is a common side effect of using opioids in acute SCD pain

Non-opioid analgesic medication (NSAIDs or paracetamol) is as effective as opioids for managing acute SCD pain

Uncontrolled chronic pain is one of the common reasons for emergency department (ED) visits by patients with SCD

Drug-seeking behaviour is one of the common reasons for patients with SCD to visit ED frequently

Opioids can be prescribed for acute SCD pain to be taken at home after ED discharge

Institutional restrictions on opioids prescriptions could limit utilizing these agents for SCD pain management

To restrict drug-seeking behaviours, frequent SCD visitors should be treated by non-opioid analgesics during acute pain attacks

Current pain scales are limited for assessing the severity of SCD pain crisis

National narcotics and opioids prescription laws are limiting utilizing opioids for appropriate SCD pain management

Accountability of addiction risk with opioids could limit using these agents for SCD pain management

Patients' cultural beliefs toward opioid side effects restrict the proper management of SCD pain

SCD pain management is based on involving the patients and their family in the decision-making process

SCD: Sickle cell disease.

Physicians' general information and therapeutic options selection for SCD-related pain management was assessed using questions related to AVOC as SCD pain, side effects of opioids, use of NSAIDS, and drug-seeking behaviour in the patients. Other items were used to describe use of opioids at home following ED discharge, opioids use restriction, and assessment of SCD pain severity using pain scale. Finally, barriers to SCD pain management were investigated by asking the participants five questions.

Data was analysed using SPSS 25. Data was analysed using descriptive statistics. Categorical variables were presented as frequencies and percentages. Chi-square test was applied to determine the association between years of experience and attitudes toward acute SDC pain management. P<0.05 was considered statistically significant.

Results

Of the 300 individuals approached, 201(67%) responded. There were 122(61%) males and 78(39%) females; 126(63%) had experience <5 years, while 41(20%) had experience >10 years; the largest group of physicians belonged to Internal Medicine 46(23%); 41(20.4%) came across SCD patients 'very often' and 31(15.4) had never come across such a patient (Table-1).

Knowledge, attitude and barriers related to SCD acute pain management of the sample were noted through responses to the 13-item questionnaire (Table-2).

There was no significant association between professional experience and therapeutic management preferences (p>0.05).

Table-1: Demographic characteristics (n = 201).

Basic Characteristics		N = 201 (%)
Gender	Male	123 (61.1)
	Female	78 (38.8)
Years of experience	Less than five years	126 (63)
	5-10 years	41 (20)
	More than ten years	34 (17)
Specialty	Internal medicine	46 (23)
	Emergency medicine	29 (14)
	Haematology	8 (4)
	Pain management	8 (4)
	Intensive Care	5 (2.5)
	Others	105 (52)
Frequency of participation in SCD acute pain management	Sometimes	68 (34)
	Very often	41 (20.4)
	Rarely	32 (16)
	Never	31 (15.4)
	Always	29 (14.4)

SCD: Sickle cell disease.

Discussion

The outcomes revealed that most of the physicians had enough information about AVOC pain in patients with SCD. Most of them believed that VOC pain was common in SCD.

There is no similar study in literature to allow for comparisons. The current study found that more than 50% participants believed that uncontrolled pain is the most common reason for frequent ED visits by SCD patients. Also, most of them admitted that drug-seeking behaviours were one of the major related complaints associated with the frequent ED visits by patients with

Table-2: Knowledge, attitude and barriers related to SCD acute pain management.

Questions	Strongly Disagree/ Disagree N (%)	Neutral N (%)	Strongly Agree/ Agree N (%)
Knowledge			
Vaso-occlusive pain is the most common type of acute pain in patients with SCD	47 (23.4)	14 (7)	140 (69.6)
Addiction is a common side effect of using opioids in acute SCD pain	47 (23.4)	33 (16.4)	121 (60.2)
Non-opioid analgesic medication (NSAIDs or paracetamol) is as effective as opioids for managing acute SCD pain	93 (46.3)	45 (22.4)	63 (31.3)
Uncontrolled chronic pain is one of the common reasons for emergency department (ED) visits by patients with SCD	44 (21.9)	50 (24.9)	107 (53.3)
Attitude			
Drug-seeking behaviour is one of the common reasons for patients with SCD to visit ED frequently	47 (23.4)	37 (18.4)	117 (58.3)
To restrict drug-seeking behaviours, frequent SCD visitors should be treated by non-opioid analgesics during acute pain attacks	58 (28.8)	50 (24.9)	93 (46.3)
Institutional restrictions on opioids prescriptions could limit utilizing these agents for SCD pain management	39 (19.5)	64 (31.8)	98 (48.8)
Barriers			
Current pain scales are limited for assessing the severity of SCD pain crisis	54 (26.9)	79 (39.3)	68 (33.8)
National narcotics and opioids prescription laws are limiting utilizing opioids for appropriate SCD pain management	55 (27.3)	77 (38.3)	69 (34.3)
Accountability of addiction risk with opioids could limit using these agents for SCD pain management	42 (20.9)	67 (33.3)	92 (45.8)
Patients' cultural beliefs toward opioid side effects restrict the appropriate management of SCD pain	57 (28.4)	60 (29.9)	84 (41.8)
SCD pain management is based on involving the patients and their family in the decision-making process	45 (22.3)	37 (18.4)	119 (59.2)

SCD: Sickle cell disease.

SCD. The finding is similar to a previous study conducted among 366 patients with SCD, which showed that pain was the most common complication of SCD requiring ED visits and hospitalisation.[7]

In the current study, physicians with <5 years of experience had higher frequency of participating in SCD pain management. It is possible that this category of physicians was applying fresh knowledge about SCD pain management acquired from medical school. Also, given the complex nature of the SCD pain management, those with more years of practice may decline to be involved in the pain management practice. However, future studies should explore this disparity.

Internal Medicine physicians accounted for the highest number of participants with frequent participation in SCD pain management. The lower proportion among other specialists may be related to being uncomfortable in managing complex SCD pain. This issue has been reported in a previous study that measured the comfort level of family physicians in treating SCD patients,[8] and reported that family physicians were generally uncomfortable with managing SCD patients and SCD complications.

The present study indicated that about 30% respondents agreed that non-opioid analgesics were as effective as opioids for SCD acute pain management. While more evidence from large randomised clinical trials (RCTs) is needed to provide information regarding the effectiveness of non-opioid analgesics in SCD pain management, the Saudi guideline expert panel did not discuss SCD pain management using non-opioid analgesics.[9] However, the ASH guideline recommends opioids as the mainstay for acute severe SCD pain and suggest utilising NSAIDs for mild to moderate pain. Also, the ASH guideline reported the importance of evaluating the opioids requirement for SCD patients upon ED discharge. The suggested recommendation is to utilise a timely patient-specific opioid dosing to prevent opioids withdrawal and breakthrough pain, especially in opioid-tolerant patients.[14] Therefore, there is a need for more evidence from the Saudi population and recommendations on the use of opioid and non-opioid analgesics for the management of SCD acute pain in Saudi Arabia.

Three factors were identified to limit optimal utilisation of opioids for the management of SCD pain crisis: accountability of promoting opioid addiction in patients with SCD; national law regarding narcotic use; and some patients' cultural beliefs. These factors could guide less-experienced physicians to frequently prescribe opioids to SCD patients with drug-seeking behaviours, leading to medication misuse.

The present study has limitations. First, the survey format using email may limit some eligible physicians who do not have an active email account or are not familiar with electronic surveys. Secondly, the sample size was small owing to the low response rate of 67%. The drawbacks may limit the generalisation of the findings.

Conclusion

Physicians had enough information about SCD pain management. Most of the participants agreed that non-opioid analgesics are more effective in managing SCD acute pains compared to opioids. Including SCD acute pain management guidelines, including the use of opioid and non-opioid analgesics in SCD national protocols, is needed for optimal management of patients with SCD pain. Provision of interventions to improve patient education and awareness among physicians on rational use of opioids could enhance appropriate utilisation of opioids.

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