

Case Study

Case Report: Successful Management of Opioid Abuse and Addiction in a Known SCD Patient at the University of Calabar Teaching Hospital, Calabar, Nigeria

ABSTRACT

BACKGROUND: Opioids are a group of potent analgesic with mixed receptor activities. Pain related symptom accounts for the main reason for substance dependence among sickle cell disease (SCD) patients.

AIMS: The report aims to elucidate the adverse effects of opioid and it's complication (abuse, dependency and addiction) and provides a management strategy for health practitioners to curtail the dependency of SCD patients to opioid use.

PRESENTATION OF CASE: The patient was a 27 years old lady that was diagnosed with sickle cell disease at the age of two. She presented with a two years history of oral self-medication of DF118 and Tramadol. She became dependent on the opioid on the account of sickle cell bone pain crises affecting both her upper and lower limbs with a pain score of 9/10. Other analgic like Diclofenac and Pentazocin couldn't ameliorate her excruciating pain but the administration of 60mg of oral DF118 provided her with quick relieve. The sedative effect of Tramadol and DF118 allows her to sleep comfortably and hence the beginning of her dependency. On review, patient's system was essentially intact and she was further referred for psychiatrist evaluation and possible rehabilitation.

DISCUSSION: Recurrent bone pain crisis represent the most common reason patient with SCD seek acute medical care. Due to the quick analgesic relief and euphoric effect derive from both medication, patients feign pain after the genuine pain had subsided in other to continue getting the prescription. The immediate pain assessment and frequent reassessment at 15min, 30min, 1hour then 2hours with appropriate application of medication until pain relief is very important to prevent drug abuse.

CONCLUSION: Less addictive analgesic should be **considered** first after observing the nature of the pain before moving to stronger analgesic that has a high potential for abuse and when stronger analgesic is to be used it should be for a short duration.

Keywords: Opioid Abuse, Sickle Cell Disease, Dependency, Addiction, UCTH

35 INTRODUCTION

36 Sickle cell disease (SCD) is a heterogeneous group of autosomal recessive structural
37 haemoglobin disorder¹. The most prevalent form is sickle cell anaemia (HbSS), which is the
38 homozygous form. Other forms of SCD include the compound heterozygous forms for
39 example, HbC in HbSC, β thalassaemia in HbS β thalassaemia among others.^{1,2}

40 SCD is the most common genetic disorder in Sub-Sahara Africa. Nigeria is bearing a high
41 disease burden with an estimated 1 – 2% of its population affected by the disease. An
42 estimated 20 – 30% of her populace carry the sickle cell gene with a normal haemoglobin
43 gene (carrier state). The disease burden differs slightly from one geographical region to
44 another. Nwogoh et al³ reported the prevalence rate of SCD to be 2.4% and a 23% carrier state
45 in Benin City. Inyama et al⁴ reported a prevalence of 3.7% in a multi-centre study in Nigeria.

46 The pathophysiology of Sickle cell anaemia is the substitution of the glutamic acid which is
47 hydrophilic with a less polar hydrophobic, neutral amino acid valine. During hypoxic
48 condition, this abnormal valine amino acid causes intraerythrocytic hydrophobic interaction
49 of affected haemoglobin tetramers, thereafter causing their precipitation and finally polymer
50 formation, leading to the loss of potassium and water resulting in cellular dehydration which
51 also promotes further precipitation and red cell rigidity⁵. Other contributing factors include
52 Nitric oxide depletion, endothelia activation with increased expression of adhesion molecule,
53 inflammation and activation of coagulation.⁵ Despite understanding the molecular basis for
54 this disease the mechanism of vaso-occlusive crisis remain so vast that it cannot be
55 completely avoided thereby predisposing many of this patient to unbearable bone pain crisis.

56 Opioid are group of potent analgesic with mixed receptor activities. Opioid is said to be
57 absorbed from the gastrointestinal tract and metabolized in the liver, gastrointestinal tract and
58 kidney. There are four types of opioid receptors (Mu, Kappa, Delta, Nociceptor-OR) with a

59 major analgesic effect and a subtype nociceptor-OR which is termed the MOP.⁶ Most opioid
60 tend to cause a reduction in consciousness and euphoria predisposing them to abuse.⁶

61 Recurrent bone pain crisis represent the most common reason patient with SCD seek medical
62 care. In a study among sickle cell anaemia patients that are substance dependent, pain related
63 symptom accounted for about 88% of all symptoms.⁷ Opioid analgesic are the mainstay of
64 therapy for bone pain crisis in SCD, thus before adulthood most SCD patients must have had
65 intermittent exposure to opioids. Opioids are potent analgesic associated with decrease
66 hospitalization.⁸The management of bone pain crisis has been an issue of debate among
67 physician. Some physician advocate minimal use of these drug for fear of addiction, while
68 others believe that inadequate analgesia predisposes patients to pseudoaddiction.⁹ There have
69 been several report in substance abuse by SCD patients with a prevalence of less than 10%
70 worldwide,¹⁰ but varies from one region to another in Nigeria. Ahmed et al¹¹ reported a
71 prevalence of 17.8% of opiate dependence among patients with SCD in Maiduguri, North
72 East Nigeria with a male preponderance. Similarly, in a study by Mabayoje et al¹⁰ an incident
73 of less than 10% was reported in the South West. Furthermore, Iheanacho et al¹² also reported
74 a less than 18.2% with male preponderance. From the various studies, it could be said that the
75 incidence varies with geographical location with a prevalence of male sex

76 CASE REPORT

77 Miss EO is a 27 years old Nigerian Female graduate with sickle cell anaemia. It was
78 diagnosed when she was 2 years old using Haemoglobin electrophoresis. She presented on
79 the 4th of January 2017 with a 2 years history of self-medication of DF118 and Tramadol. She
80 said she got addicted to these drugs about 2 years ago while she was admitted at government
81 hospital in Calabar on account of sickle cell bone pain crisis affecting her upper and lower
82 limb which was so severe with a pain score of 9/10 (based on numerical pain rating scale) and

83 lasted for about 48hours despite administration of several analgesic such as Diclofenac and
84 Pentazocin. Pain began to subside on administration of oral DF118 at 60mg to alternate with
85 Tramadol 100mg which was given for a week. Patient said while she was on admission she
86 enjoyed the feelings of the quick relief of the pain and sedative effect that allows her to sleep
87 comfortably following the administration of DF118 and Tramadol. Patient on account of this
88 improvement sought to know the name of the medication that could give such a wonderful
89 relief and also because of fear of reoccurrence of the pain. She also noticed that both
90 medication become drug of choice each time she has severe bone pain and present to the
91 same health centre. She said on account of the psychological burden of the disease on her
92 parents, who were worried of the repeated bone pain crisis with frequent hospital visits and
93 was also discovered that both medication give their daughter relief and reduce their hospital
94 visit, therefore decided to purchase a card of each medication weekly for her.
95 Administering 30mg of DF118 twice daily initially but after 5 months increased the dosage to
96 60mg twice daily for a year because the initial dosage could not control the pain and she was
97 very uncomfortable. She started with the new dose in the absence of pain because she was
98 enjoying the euphoric effect. Patient revealed she was purchasing the drug on her own and
99 even exaggerates her pain to get the drug prescription from her physician and at most time
100 she gets it without prescription from a private pharmacy whose identity she does not want to
101 disclose. Patient said she spends about ₦300 (approximately \$1) to purchase a card, which
102 she finances with her pocket money, selling her belonging, borrowing and buying on credit.
103 Patient said after a year of self-medication of oral DF118 at 60mg twice daily she discovered
104 she was not getting the relief she used to get. Patient said she got depressed and decided to
105 change to another potent oral opioid (Tramadol) not the injectable because she reacts to the
106 injectable, with nausea and continuous vomiting. She said she started with 50mg of Tramadol
107 twice daily, got relief and also enjoyed the euphoric effect and later increased the dose to

108 100mg then 200mg twice daily which she took every day for 1year even in the absence of
109 pain. She gets the drug from a pharmacy and each card **costs** between ₦1700 - ₦2000
110 (approximately \$7). **She also gets** prescription from a doctor whose she refuse to mention the
111 name or address. She also **claims** that anytime she tries to stop the medication she **develops**
112 withdrawal symptoms which include lack of sleep, restlessness, sweating, dizziness, blurred
113 vision, headache, joint pain and abdominal cramping, depression, agitation and craving for
114 the drugs. **Thus, these made her to seek help.**

115 On examination, a young lady, pale, anicteric, conscious, alert and coherent, well oriented in
116 person, time and place, well groomed with good motor function with intact long and short
117 term memory, sense of judgement was mildly impaired. A review of her systems were
118 essentially intact, patient **was** referred to the psychiatric **team** for further evaluation and
119 possible detoxification and rehabilitation.

120 The following were the full blood count; PCV was 27%, Hb 9g/dl, WBC $11.2 \times 10^9/L$,
121 Neutrophiles 68%, Lymphocyte 32%, and Platelet $452 \times 10^9/L$

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125 **DISCUSSION**

126 This is a case study of a SCA patient who is dependent and addicted to tramadol and DF118.

127 BPC is the most common presentation among SCD,¹⁴ which our index patients suffers about
128 10-12 episodes annually necessitating **her** to seek treatment from a health **practitioner who**
129 **prescribed** Tramadol and DF118. It was also noticed that the patient was on these prescribed
130 drug (DF118 & Tramadol) for too long with prescription note not properly controlled, which

131 made her to have access to this prescription note. Due to the quick analgesic relief and
132 euphoric effect **derived** from both **medications**, the patient has to feign pain after the genuine
133 pain had subsided, in **order** to continue getting the prescription¹⁴. **Based** on this it is pertinent
134 to say the patient is addicted to both drug and the primary aim of both drugs is now being
135 abused. Lack of proper orientation and counselling of the parents of the patient also
136 contributed to the abuse of the above medications. At this juncture, clinical expertise and
137 judgement of the physician is highly needed to distinguish genuine pain from feigned pain in
138 a patient with SCD with DF118 & Tramadol abuse. There **is** a paucity of information on
139 DF118 and Tramadol abuse among sickle cell disease patient. Alao et al¹³ reported the case
140 of a 38-year-old female sickle cell anaemia patient, though the drug of choice in this instance
141 was cocaine.

142 The immediate pain assessment and frequent reassessment at 15min, 30min, 1hour then
143 2hours with appropriate application of medication until pain relief, **are** very important to
144 prevent drug abuse.^{15,16} Therefore the less addictive analgesic should be administered first
145 after considering the nature of the pain before moving to stronger analgesic that have high
146 potential for abuse and when stronger analgesic is to be used it should be for a short
147 duration.^{15,16}

148 The psychiatrist made an impression of opioid abuse and addiction in a known SCD patient.
149 Patient was initially managed on outpatient basis because patient **had** full insight of her
150 problem and also has the desire to stop **but** does not wish to be admitted.

151 On mental state examination, patient was calm with good hygiene, cooperative and appears
152 motivated and emotionally stable. Her perception was normal, thoughts well collected with
153 normal cognition.

154 On physical examination, the patient was a young slim tall lady, afebrile, anicteric, acyanose
155 with long limbs. The patient has gradually tapered off tramadol with a 50mg weekly
156 reduction for about 6weeks until she suddenly developed an episode of bone pain crisis. She
157 was then admitted for five weeks where she was treated with NSAID (Arthrotec) 75mg which
158 was alternated with paracetamol 1000mg. Patient was also given diazepam 10mg and was
159 carefully observed all through the period of admission with total avoidance of opioid, she was
160 then discharged and placed on a routine medication of folic acid, paludrine and was given 2
161 weekly clinic appointment to ensure proper follow up. The patient was also counselled to
162 adopt pain tolerance.

163 **CONCLUSION**

164 It is suggested that regular orientation of health worker on the use of opioid particular DF118
165 and Tramadol among opioid naive SCD, a careful objective assessment of sickle cell patient
166 presenting with painful episodes should be carried out by an experienced health caregiver
167 with each case taken on its own merit. A non-opioid analgesic should be commenced first and
168 if an opioid should be used, it should be used for a short duration. Prescription note of opioid
169 analgesic should be properly controlled; there should be a drug unit established and also
170 legislation against sales of this controlled drug. Opioid addictive patient should be taught how
171 to tolerate pains and referred to a psychiatrist for detoxification and rehabilitation.

172 **Consent Disclaimer:**

173 As per international standard or university standard written patient consent has been collected
174 and preserved by the author(s).

175 **Ethical Disclaimer:** NA

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