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Prescription Pattern of Analgesics for Post Caesarean Section Pain in Nnamdi Azikiwe University Teaching Hospital, Nnewi, South East, Nigeria

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ABSTRACT

Background: Post caesarean section pain has been associated with physical, psychological and social consequences which can negatively impact on the wellbeing of the patient including post partum depression and development of chronic pain syndrome if not treated. **Objective:** To evaluate the prescribing pattern of analgesics for post cesarean section pain relief **Materials and Methods**: This is a retrospective cross sectional study of caesarean sections that were carried out at Nnamdi Azikiwe University Teaching Hospital, Nnewi, Nigeria from January 2016 to December 2017. The case notes including anesthesia and treatment charts of 529 women who had caesarean sections within the period under review were obtained from the medical records department. Demograhic data, type and mode of analgesic given, anaesthesia techniques, indication for caesarean section and length of stay in the hospital were obtained. The data were analyzed using statistical package of social sciences (SPSS) version 21. **Results:** A total of 529 participants had caesarean section. Pentazocine was the most prescribed analgesic either alone or with other analgesics accounting for a total of 74.1%. Intramuscular tramadol alone accounted for 24.8% while 1.1% of the participants received epidural with catheter in-situ beyond the surgery duration aimed at achieving extended analgesia. Spinal anaesthesia was the highest technique of anaesthesia. Obstetrician prescribed all the analgesic provided post operatively. **Conclusion:** We conclude that most of the participants received single and weak analgesics contrary to the WHO multi modal analgesic recommendation for acute pain such as post caesarean section pain.

Keywords: Analgesic prescription; multi modal; pattern; post caesarean section pain

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INTRODUCTION

Pain is defined by the International Association for the study of pain (IASP) as an unpleasant sensory and emotional experience associated with or resembling actual or potential tissue damage.[1] It combines severe discomfort, fear, autonomic changes, reflex activity and suffering which led to the declaration

of pain relief as a fundamental human right.[2-4] Unfortunately, the management of post operative pain has remained a major challenge to clinicians and patients especially in the low-resource countries like Nigeria.[5-6]

Caesarean Section as one of the commonest surgeries carried out among women of reproductive age induces severe pain especially in the first 24-48 hours post operatively which notably has been reported to be associated with increased morbidity, prolonged hospital-stay, post-partum depression, unwillingness to care for the newborn and probable development of chronic pain syndrome if not resolved.[3,7-11]

Novel effort has been deployed globally to improve the knowledge and practice of pain medicine, but there has not been appreciable breakthrough in our setting.[6,11] Paucity of information regarding the management of post cesarean pain in Nnamdi Azikiwe University Teaching Hospital, Nnewi, Anambra State, southeast Nigeria necessitated this study aimed at evaluating the pattern of analgesics prescription for post caesarean section pain relief.

MATERIALS &METHODS

Study design

This is a retrospective cross sectional study of patients who underwent caesarean section (C/S) from January 2016 to December 2017 at Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, Anambra State, Nigeria.

Study area

The study was carried out at Nnamdi Azikiwe University Teaching Hospital, (NAUTH) Nnewi, Anambra State, Southeast Nigeria.

Study population

This includes recruitment of all 529 women who underwent C/S including receiving post operative analgesia during the period under review at NAUTH, Nnewi, Anambra State, Nigeria.

The convenience sampling method was adopted choosing all patients who underwent caesarean section and receiving post operative analgesia during the period under review.

Data collection

The researchers obtained the case notes of 529 patients who underwent caesarean section within the period under review including their medical records, anesthesia and treatment charts from the medical records department.

The data obtained were entered into a pre-designed proforma including hospital number, age, indication for cesarean section, type of cesarean section, anaesthesia technique, types of analgesic prescribed with doses, frequency and number of days spent in the hospital after the operation.

The data were collated, analyzed using statistical package of social sciences (SPSS) version 21and the results were presented in de- identified format as counts or frequencies, means and percentages.

RESULTS

A total of 529 case notes of participants who had caesarean sectionfrom January 2016 to December 2017 were recorded.Elective C/S accounted for 54.8% (290) while emergency C/Srepresented 45.2% (239). The mean age of the participants was 31.65 ± 5.2 years (range = 21-46 years).

Spinal anaesthesia was the highest anaesthesia technique used accounting for 84.3% (446) while 14.6% (77) received general anesthesia and 1.1% (6) received combined spinal epidural anesthesia.

Most of the participants (76.2%) were discharged less than 6 days post-operatively however, 23.8% of the spent more than 6 days after surgery.

Analgesic Prescription:

Intramuscular Pentazocine was the most commonly prescribed analgesic either alone or in combination with other agents accounting for a total of 75.2% (398) participants while 24.8% (131) of the total participants received intramuscular Tramadol.

Out of the entire participants, 55.8% (295) had Pentazocine alone while 18.3% (97)and 1.1% (6) received Pentazocine with rectal Diclofenac and epidural analgesia respectively.The obstetricians prescribed all of the analgesic.

A Summary of the Sample Characteristics is presented in Tables: 1,2 and 3

1. Demographic Distribution

Age (Years)	**Number of Patients**	**Percentage (%)**
20 - 24	80	15.1%
25 – 29	146	27.6%
30 – 34	161	30.4%
35 – 39	53	10.1%
40 – 44	51	9.6%
45 – 49	38	7.2%
Total	**529**	**100.0%**
Type of CS	**Number. of Patients**	**Percentage (%)**
Elective	290	54.8%
Emergency	239	45.2%
Anaesthesia Technique	**Number. of Patients**	**Percentage (%)**
General	77	14.6%
Spinal	446	84.3%
Combined Spinal Epidural (CSE)	6	1.1%
Length of Hospital Stay	**Number. of Patients**	**Percentage (%)**
Greater than 6 days	126	23.8%
Less than 6 days	403	76.2%

2. Indication for Caesarean Section

Indications	Number of Patients	Percentage (%)
Placenta Previa	16	3.0
Placenta Abruption	8	1.5
Severe Pre- eclampsia /Eclampsia	52	9.8
Abnormal Presentation	46	8.7
Obstructed Labour	76	14.4
Multiple gestations	25	4.7
Gestational diabetes complications	26	4.9
Fibroid co-existing with pregnancy	38	7.2
Previous C/S	102	19.3
Failed induction of labour	55	10.4
Post-dates	31	5.9
	529	**100**

3. Analgesics prescribed, routes, dosages and frequency

Analgesic	**Route of Administration**	**Dosage**	**Frequency**	**Number of Patients**	**Percentage (%)**
Pentazocine	Intramuscular	30mg	6 hourly	398	75.2%
Tramadol	Intramuscular	100mg	6 hourly	131	24.8%
Analgesic	**Route of Administration**	**Dosage**	**Frequency**	**Number of patients**	**Percentage (%)**
Pentazocine alone	Intramuscular	30mg	6hourly	295	55.8%
Pentazocine + Diclofenac	Intramuscular Rectal	30mg 100mg	6hourly 12hourly	97	18.3%
Pentazocine + Plain bupivacaine	Intramuscular Epidural	30mg 0.25%	6hourly PRN	6	1.1%

DISCUSSION

Post cesarean section pain has a profound physical, psychological and social consequences which can negatively impact on the well-being of the patient including post postpartum depression, loss of enthusiasm to care for the new born and consequent development of chronic pain syndrome.[4,5,8] The need for adequate post operative analgesia cannot be over emphasized where in several literature have demonstrated its benefits including reduced morbidity, mortality and length of stay in the hospital.[7]

With the search for a balanced and rational

prescription of analgesia to alleviate the pain burden in world's population, World Health Organization (WHO) introduced a model for the management of cancer pain,[13] which has now grown in popularity and widely accepted by most professional bodies including American Society of Anesthesiologist (ASA) and American College of Obstetrician and gynecologist (ACOG) because of its adaptability to the management of post operative pain.[14-15]

The WHO model is a 3-tier analgesic approach involving the use of non-opioids such as NSAIDS and acetaminophen for mild pain and then introduction of weak opioids such as tramadol, codeine etc with either of the simple analgesic mentioned above in the management of mild to moderate pain however, for the treatment of acute or severe pain such as post operative pain which occupies the third rung of the analgesic ladder requires the use of stronger opioids like morphine, fentanyl and pethidine in combination with other analgesic.[16-17] Unfortunately these guidelines have not been followed in most low-middle income countries which was similarly observed and consequently contributed to (persistent) high prevalence of moderate to severe pain after surgery in the study environment.[18-20]

In this study, majority of the participants summed up to 80.6% received single analgesic post-operatively (Pentazocine alone = 55.8% and 24.8% received tramadol only) whereas the percentage of the study population who received a form of multimodal analgesic prescription was significantly low which included 18.3% of those who received a combination of intramuscular pentazocine with rectal diclofenac and 1.1% of those who received intramuscular pentazocine in addition to already established epidural analgesia provided through the catheter left in-situ to provide extended analgesia through local anesthetic top-ups. This finding were however similar to the results obtained from a study conducted in Ilorin in which majority of the study population (86.4%) received single analgesic (intramuscular pentazocine) postoperatively for post cesarean section.[19]

Similarly, in an exploratory survey examining the experiences of post cesarean section pain among participants in a large tertiary hospital in Uganda, they reported that 44% of the participants were given single analgesic meanwhile only 14% of the participants received multiple analgesics but the rest of the participants did not receive any form of analgesics post operatively.[21] These results simply demonstrated that the analgesic prescription pattern in most of the low-income countries largely failed to adhere to the WHO recommended model.

Despite the United Nations convention declaration that strong opioids like fentanyl, morphine and pethidine be made readily available, accessible and mandatory for the treatment of acute pain, a large percentage of world population particularly in the low-income countries as revealed in our study and other studies examined showed that weak opioids (pentazocine and tramadol) continues to enjoy highest patronage notwithstanding the widely established facts of their incapability to effectively manage acute pain and its attendant consequences which included development of chronic pain and probable prolonged hospitalization etc.[17-18,20-21,25]

Some of the possible reasons for the poor access to opioids medicines in our view may include inability of government in some low income countries to put in place functional narcotic supply chain system that will guarantee regular availability and unnecessary restriction or regulation on the practice and use of opioid medicines.[16-17]

We reported that all the post operative analgesics prescribed in our studies were carried out by the surgeons which we suspect may also have contributed to the pattern of analgesics observed similar to the findings of other researchers in low- income countries unlike what obtains in developed countries like America, United kingdom and India where immediate post operative pain is managed by the anaesthesiology team or the Acute Pain Service team who are specially trained in analgesic prescription.[18-22,24,27]

We observed a number of limitations in this study including missing data and retrospective nature of the study which hampered our inability to correlate some of our findings thus suggesting further studies, preferably prospective case control study.

CONCLUSION

In conclusion, mono analgesic prescription pattern dominated the management of post operative pain in our study and those from other the low - middle-income countries contrary to the WHO prescribed Multimodal analgesics protocol. We therefore recommend for a multidisciplinary approach involving anaesthesiologists, obstetrician and other relevant medical staff with a view to providing multi-modal analgesic prescription pattern for post caesarean section pain in our hospital.

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Author Contributions
SCO, ABO, KNO and GUE conceptualized and design the study. LCO, CPU, CPN, MCO and ALO contributed to the implementation project and review of the manuscript. All the authors participated in the writing and revision of the manuscript. The authors read, approved the final manuscript and agreed to accountable for all aspects of the work.

Data availability
The data used to support the findings of this study are available from the corresponding author upon reasonable request.

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Conflict of interest
There is no conflict of interest.

Ethical approval
The study was approved by the Institutional Ethics Committee.

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