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Postoperative Pain in the General Surgery Department of Fousseyni Daou Hospital in Kayes

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Abstract **Original Research Article**

Goal*:** To study the management of postoperative pain in the general surgery department of the Fousseyni DAOU hospital in Kayes. ***Patients and Method: We conducted a prospective 6-month study from November 2022 to May 2023, involving 107 surgical patients, aged 15 to 81 years, who met the inclusion criteria. We assessed pain using the Visual Analogue Scale (VAS) at patient admission, at the second hour, and then every eight hours until seventy- second hours after analgesic use. Multimodal analgesia was the most widely used in the study. Administration of paracetamol alone and/or in combination with nefopam and/or ketoprofen and/or morphine. The evolution of pain as well as adverse effects after administration of analgesics were investigated. ***Results*:** The mean age of our patients was 35.9 years with extremes of 15 and 81 years. Male sex was the most represented at 64.5% with a sex ratio of 1.82 and the majority of patients were classified as ASA 1 (82.2%). VAS less than 3 (VAS≤ 4) was most observed during the first 2 hours postoperatively, i.e. 41.1% for VAS 0-2 and 28.9% VAS 3-4 at rest, respectively, and respectively 33.6% and 30.8% for no pain and mild pain. At 24 hours postoperatively, 87.2% of patients did not feel pain after the resting assessment, this figure increased from 89.8% at the 48th postoperative hour at rest, still after the use of analgesics. At the 72nd hour, we observed cases of pain, i.e. 0.9% of patients, which was related to a postoperative complication. The average cost of pain management was estimated at 23580 FCFA. Side effects observed were vomiting in 3 patients and drowsiness in one patient. ***Conclusion*:** Postoperative pain is still understudied, the evaluation with the visual analogue scale of patients before and after the use of analgesics has allowed us to better understand patients' pain and to improve pain management in the surgical department.

Keywords: Postoperative pain, assessment with the visual analogue scale (VAS), analgesic treatment, Kayes general surgery.

1. INTRODUCTION

According to the International Association for the Study of Pain (IASP), pain is defined as "an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage" [1].

Postoperative pain is considered a form of acute pain due to surgical trauma with an inflammatory response and the initiation of an afferent neural dam. It is a combined constellation of several unpleasant sensory, emotional, and mental experiences precipitated by surgical trauma and associated with autonomic, endocrine-metabolic, physiological, and behavioral responses [2]. Postoperative pain is very common in a SFAR study in 2021, 81% of patients were mild in IPCU and 6% had severe pain [3].

A Norwegian study, published in 2012 and involving more than 10,000 patients, showed that 40.4% of subjects who underwent surgery had persistent pain, of which 18.3% were moderate to severe [4].

At Guido Valadares Hospital in Timor in 2020, in 85 postoperative patients, more than 40% had an EVS

score greater than 5, of which 15% reported an EVS score between 8 and 9 [5].

In South Africa in 2016, out of 1231 patients assessed at 24 hours postoperatively with the Visual Analogue Scale at Tygerberg Hospital, 62% of patients experienced moderate or severe pain [6].

In Senegal in 2018 postoperative pain was the concern for 50% of patients, 84.4% of patients had not received information on the management of their pain. Postoperative pain was found in 96.9% of the patients, 67.7% of whom experienced severe pain and 22.6% were not relieved by analgesic treatment [7].

In Mali, according to a study carried out in 2014 at the Gabriel Toure University Hospital (CHU) in Mali, 85% of interns had not seen a pain management protocol in the department where they were on internship, due to the absence of one during their visit and 85% never assessed the pain before it was taken care of [8], and in 2009 in Kayes, SIDIBE M found that 40% of postoperative patients presented with intense pain, 42.8% with moderate pain and 17.1% with mild pain according to the EVS upon waking [9].

Inadequate postoperative pain management has undesirable physiological and psychological impacts, delayed healing, delayed return to normal daily life, and reduced patient satisfaction. It is important to note that poor pain management can lead to chronic postoperative pain, increased pain and increased pain.cost of health and prolonged use of health resources [10]. Postoperative pain remains underestimated and therefore insufficiently treated, very few studies have been conducted on postoperative pain at the Fousseyni DAOU hospital in Kayes, hence the interest in studying the management of postoperative pain in the general surgery department of the Fousseyni DAOU hospital in Kayes.

2. PATIENTS AND METHOD

This was a prospective descriptive study from November 2022 to May 2023, i.e. a period of 6 months in the general surgery department at the Fousseyni DAOU Hospital in Kayes. It focused on patients hospitalized in general surgery at the Fousseyni DAOU Hospital. We conducted a comprehensive recruitment of all inpatients during the period.

Included

- All patients operated on and hospitalized in the general surgery department;
- patients who have undergone a postoperative assessment of pain intensity;
- Patients who have benefited from the application of the care protocol;
- Informed and free consent of patients.

The data were collected on an individual survey sheet, analysed and entered using the SPSS software. The statistical test used was chi2; with a significance level of $P<0.05$.

3. RESULTS

During our study period, 235 patients were seen in surgical consultations, we collected 169 patients, i.e. 71.9%, in the general surgery department, and our study focused on 107 patients operated on in the department, i.e. a frequency of 63.3%.

The mean age was 35.9 years with extremes of 15 years and 81 years with a standard deviation of 29.6. Men were the most represented at 64.5%, i.e. a sex ratio of 1.82 in favour of men. The majority of patients came from the city of Kayes, 71.1%.

Table I: Main Patient Activity

Main activity	Actual	Percentage
Official	12	11,2
Housewife	28	26,2
Pupil / Student	30	28,1
Peasants	16	14,9
Manoeuvre	14	13,1
Merchant	7	6,5
Total	107	100

Table II: ASA classification

ASA	Actual	Percentage
ASA 1	88	82,2
ASA 2	19	17,8
Total	107	100

Table III: Type of Anesthesia

Anaesthesia	Actual	Percentage
Local	20	18,5
Spinal anesthesia	42	39,2

Anaesthesia	Actual	Percentage
General anesthesia without IOT	15	14,3
General Anesthesia+IOT	30	28
Total	107	100

Table IV: Etiological diagnosis

Diagnosis	Actual	Percentage
Appendicitis	**30**	**28,1**
Peritonitis	15	14
Occlusion	10	9,3
Hemoperitoneum	3	2,8
Evisceration	1	0,9
Inguinal hernia /inginoscratal/white line	11	10,3
Hydrocele	2	1,9
Breast abscess	2	1,9
Buttock abscess	2	1,9
Penetrating wound to the abdomen	2	1,9
Digestive tumor	2	1,9
Ovarian cyst	2	1,9
Cystic Scalp/Buttock Tumor	2	1,9
Lipoma	2	1,9
Anal fistula	1	0,9
Anal fissure	1	0,9
Hemorrhoid	1	0,9
Gangrene in the upper and lower limbs	3	2,8
Postoperative Ventration	1	0,9
Wound decay upper/lower limb	8	7,5
Budding tumor of the forearm	1	0,9
Necrotizing fasciitis	1	0,9
Pyomyositis	3	2,8
Phagedenic ulcer	1	0,9
Total	107	100

Table V: Type of Surgery

Types of Surgery	Actual	Percentage
Visceral	67	62,7
Parietal	12	11,2
Traumatology (Member)	12	11,2
Proctology	3	2,8
Gynaecology	4	3,7
Urology	2	1,9
Other	7	6,5
Total	107	100

Table VI: Type of incision

Nature of the incision	Actual	Percentage
Laparotomy	**68**	**63,5**
Inguinotomy	9	8,4
Anal Arciform	3	2,8
Perimamellonary Arciform	2	1,9
Linear (scalp, subscapular, scrotal, upper and lower extremity)	17	15,9
Limb amputation	4	3,7
Skin biopsy	2	1,9
Linear buttocks	2	1,9
Total	107	100

Table VII: Pain Intensity at Discharge from the Operating Room VAS at Rest and Exercise

EVA	Rest	Percentage		Effort	Percentage
0-2	44	41, 1		36	33,6
3-4	31	28,9		33	30,8
5-6	16	14,95		18	16,8
7-8	10	9,4		12	11,3
9-10	6	5,7		8	7,5
Total	107	100		107	100

Table VIII: Pain intensity 2 hours after the 1st protocol

EVA	Rest	Percentage	Effort	Percentage
0-2	84	78,5	80	74,8
3-4	10	9,3	12	11,2
5-6	5	4,7	5	4,7
7-8	5	4,7	6	5,6
9-10	3	2,8	4	3,7
Total	107	100	107	100

Table IX: Pain intensity 8 hours after the 1st protocol

EVA	Rest	Percentage	Effort	Percentage
0-2	56	52,3	48	44,9
3-4	22	20,6	23	21,5
5-6	12	11,2	14	13,1
7-8	10	9,4	13	12,1
9-10	7	6,5	9	8,4
Total	107	100	107	100

Table X: Pain intensity 24 hours later

EVA	Rest	Percentage	Effort	Percentage
0-2	94	87,9	90	84,1
3-4	9	8,4	11	10,3
5-6	3	2,8	3	2,8
7-8	1	0,9	3	2,8
9-10				
Total	107	100	107	100

Table XI: Pain intensity 48 hours later

EVA	Rest	Percentage	Effort	Percentage
0-2	96	89,8	91	85,1
3-4	9	8,4	11	10,3
5-6	1	0,9	2	1,8
7-8	1	0,9	3	2,8
9-10				
Total	107	100	107	100

Table XII: Pain intensity 72 hours later

EVA	Rest	Percentage	Effort	Percentage
0-2	98	91,6	97	90,7
3-4	7	6,6	7	6,5
5-6	1	0,9	1	0,9
7-8	1	0,9	2	1,9
9-10				
Total	107	100	107	100

Table XIII: Follow-up

Suites	Actual	Percentage
Simple	99	92,5
Complications	8	7,5
Total	107	100

4. DISCUSSION

We conducted a descriptive prospective study from November 2022 to May 2023, a six-month period. During the study, 169 patients were admitted to the general surgery department, 107 patients aged 15-81 years met the inclusion criteria.

This study allowed us to study the management of postoperative pain at the Fousseyni DAOU hospital in Kayes.

Limitations of the Study

We were confronted with a number of problems, namely the lack of a recovery room for patients, the supply of analgesic products at the expense of patients, the limited number, the lack of training of qualified nursing staff, sometimes leading to a delay in care, assessment and management of pain in the postoperative period.

Ethically, the limited number of caregivers and the lack of a professional pain management caregiver had an impact on pain management. The need to listen, to solicitude, to calm down and to be constantly present during the pain patient's complaints brought a caregiver already in charge of activity in the department to confront him.

The mean age of our patients 35.9 years (15-40 years) does not differ from the results of LANKOANDE M in Burkina Faso [40], and ONGOIBA O in Mali [38], which were 35.79 and 35.3 respectively but lower than the result found by Tano *et al*., in Ghana [42]. These results can be explained by the fact that the sub-Saharan African population is predominantly young.

Our study showed a male predominance of 64.5%. These results could be explained by the fact that men are more affected by traumatological pathologies, of which a number of cases were included in the study.

Our result is similar to those obtained by MEUZEBOU NA [39], DIARRA MD [41], which found 71.2% and 60% respectively but differed from the result obtained by BEKELE B [44] ,which found a female predominance of 53.3%.

At H8:

Seventy-eight percent of patients represented the zero and low pain scales in our study, this result is superimposed on the results of the Malian series, but differs from the Ethiopian, Algerian, and Senegalese series which found a high incidence of pain, high incidence of moderate pain, and severe pain. These results can be explained by differences in sample size, types of surgery and analgesia methods used

At H24:

The low proportion of pain in our study of 96.3% is superimposed on the result of TEIXERA C[48] 70% in France and Malian results from DIARRA MD [43], MEUZEBOU NA [39], and ONGOIBA O [38], which were 92.9%, 80.8% and 84.62% respectively.

MILLION TE [45]. In Ethiopia, 63% was found to be in moderate to severe pain, this proportion is explained by the size of the sample, the lack of use of a standard pain management protocol.

At H48:

The evolution of pain postoperatively is marked by a decrease in pain scores over time and a decrease in patient complaints.

98.2% of our patients experienced mild to no pain, this result does not differ from MEUZEBOU NA[39] by DIARRA MD [43], and ONGOIBA O [38], in Mali, but differs from Million TE in Ethiopia [45], where moderate to severe pain accounted for 40%.

At H72:

It is conventionally accepted that postoperative pain rarely exceeds 72 hours, a duration that corresponds to the period of availability of a self-controlled analgesia pump with morphine for the relief of the most severe pain [49], But this method of self-management of pain remains precarious or even absent in our hospitals.

Absence of pain accounted for 98.2% in our series differs from TANO PF results [42], in Ghana which found 3% for no pain incidence and 73.1% for moderate pain incidence but does not differ from DIARRA MD [43], and ONGOIBA O [38].

5. CONCLUSION

The management of postoperative pain remains a major problem in the surgery department of the Fousseyni DAOU hospital in Kayes due to the lack of a standard protocol and the training of nursing staff on pain management. The pain is intense during the first 24 hours postoperatively and decreases significantly around 72 hours postoperatively in general.

REFERENCES

1. Raja, S. N., Carr, D. B., Cohen, M., Finnerup, N. B., Flor, H., Gibson, S., ... & Vader, K. (2020). The revised International Association for the Study of Pain definition of pain: concepts, challenges, and compromises. *Pain*, *161*(9), 1976-1982.
2. Jorgen, B. D., & Kehleth. (2006). Postoperative pain and it's management. In:McMoha n SB,Koltzenburg M,editors. Wall and Melzack's Texbook of pain. 5th ed. Eslsevier Churchill Livingstone:Philadelphia, 635.
3. Rouxel, P., Tran, L., Sitbon, P., Martinez, V., & Beloeil, H. (2021). Postoperative pain management: the AlgoSFAR study, a national audit of 3315 patients. *Anesthésie & Réanimation*, *7*(6), 376-386.
4. Flecther, D., Mardaye, A., Fermanian, C., & Aegerter, P. (2008). Evaluation of practices on

postoperative analgesia in France: national survey with analysis of differences in practice according to the type of establishment. *French Anesthesia Resuscitation Anesthesia*, *27*(5), 700-708.
5. Grace, R. F. (2020). Post-operative pain management at Hospital Nacional Guido Valadares, Dili, Timor-Leste. Word federation of societies of anesthesiologists,Dean Bradley House,52 Horseferry,Rd,London SW1P2AF,UK.
6. Murray, A. A., & Retief, F. W. (2016). Acute postoperative pain in 1 231 patients at a developing country referral hospital: incidence and risk factors. *Southern African Journal of Anaesthesia and Analgesia*, *22*(1), 26-31.
7. Leye, P. A. (2018). Assessment of postoperative pain in the surgical emergency department of the ARISTIDE LE DANTEC UNIVERSITY HOSPITAL. Ramur, *African Journal of Surgery*, *5*(1), 13-19.
8. Dembele, B. T. (2014). Training project for surgical interns on the management of postoperative pain at the Gabriel Touré University Hospital in Bamako.Mémoire DU Bordeaux. dumas-01310213.p14-15.
9. Sidibe, M. (2010). Management of postoperative pain in digestive surgical emergencies by injectable paracetamol in the Surgery B department of the Fousseyni Daou Hospital in Kayes [Internet] [Thesis]. University of Bamako. https://www.bibliosante.ml/handle/123456789/9141
10. Joshi, G. P., & Ogunnaike, B. O. (2005). Consequences of inadequate postoperative pain relief and chronic persistent postoperative pain. *Anesthesiology Clinics of North America*, *23*(1), 21-36.
11. Thierry, D., & François, B. Centre for the assessment and treatment of pain at Saint Antoine Hospital. Paris, France 75012. Mirandière 19.
12. Chauchard, P. (1950). Pain. Presses universitaires de France.6th edition. Collection que sais-je#127.in 12.1950. Paperback.128 pages. No Title.
13. Keita, S. B. (1999). Postoperative Analgesia in Adults. Assessment and treatment of acute pain with propacetamol hydrochloride (Prodafalgan), clonidine (Catapressan), metamizole sodium (Novalgin), and Buprenorphine hydrochloride (Temgesic). Ph.D. in Medicine, Bamako, 89.
14. Guirimand, F., & Chauvin, M. (1985). Physiology of Nociception and Pain Evaluation, in Anesthesia and Surgical Resuscitation, 2nd Edition Medicine Science, Flammarion. Paris.
15. Haddad, M. (2001). Physiology of nociception. *Maghreb Med*, 52-4.
16. Brown, F. A. (1998). How to assess postoperative pain; French Annale d'Anesthesia Resuscitation. *Elsevier Paris*, *17*, 462-70.
17. Fletcher, D. (2001). Postoperative analgesia: Anesthesia. *Rev Prat Paris*, *51*, 863-6.
18. Graham, G. G., & Scott, K. F. (2005). Mechanism of action of paracetamol. *Am J Ther*, *12*, 46-55.
19. Chauvin, M. (2000). Management of Postoperative Pain Inter Bloc, 19(2), 1004-1006.
20. Samama, G. (2002). The Operating Room Nurse Theoretical Approach to Anesthesia. Anesthesia Notebook.
21. Laurent, B. (2000). Assessment and treatment of pain, scientific and medical publishing. Elsevier SAS SFAR, 93-108.
22. National Congress of Anesthesia and Intensive Care. Refresher Conference: The Essentials. Elsevier Masson. Paris: Elsevier; 2005.
23. Willer, J. C. (1993). The Bars D. Physiology of Painful Sensation, Technical Edition. EMC Anesth Réanimation Paris, Fr, 36-020.
24. Diarra, L. M. (2002). Anal pain in surgery "B" of the G-spot hospital, Thesis in medicine Bamako, 62.
25. Owono Otoundi: postoperative analgesia by perfalgan*, 21st congress of the Society of Anaesthesia and Intensive Care of Francophone Black Africa (SARANF). Yaoundé (Cameroon).
26. Eledjam, J. J., & Viel, E. (2004). Postoperative rehabilitation: From concept to clinical application. Ann Chir Paris, 3-6.
27. Brewer, L. Physiology of nociception, evaluation of the painful patient. Pain management. Ancycl Med chir (Elsevier Paris) 5-1180.
28. Besson, J. M. (1987). Physiology of Pain, Technical Editions. *EMC Neurol Paris Fr*, 10.
29. Dehen, F. (1995). Fonctions somesthésiques, éditions technique, EMC neurologie (Paris France), 17-002-c-50,6p.
30. Gross, T., Pretto, M., Aeschbach, A., & Marsch, S. (2002). Pain management in surgical wards. Quality and solutions for improvement in the early postoperative period. *Der Chirurg; Zeitschrift fur Alle Gebiete der Operativen Medizen*, *73*(8), 818-826.
31. Henry, J. (1977). Attempts to measure pain. unidentified publisher; 1977.
32. Mery, V. (1978). Methods of assessing pain. DIAMANT. pads; 15-17.
33. Executioner, F. (1981). Physiological Basis of Acute and Chronic Pain: *Similarities and Differences Journal of Medicine*, 33, 10.
34. Melzack, R. (1975). The McGill Pain Questionnaire: major properties and scoring methods. *pain*, *1*(3), 277-299. DOI: 10.1016/0304-3959(75)90044-5. PMID: 1235985.
35. Broadman, L. M., Rice, L. J., & Hannallah, R. S. (1988, September). Testing the validity of an objective pain scale fob infants and children. In *The Journal of the American Society of Anesthesiologists* (Vol. 69, No. 3A, pp. A770-A770). The American Society of Anesthesiologists.
36. Botti, M., Bucknall, T., & Manias, E. (2004). The problem of postoperative pain: issues for future research. *International journal of nursing practice*, *10*(6), 257-263.

37. Tufano, R., Puntillo, F., Draisci, G., Pasetto, A., Pietropaoli, P., Pinto, G., ... & Varrassi, G. (2012). ITalian Observational Study of the management of mild-to-moderate Post-Operative Pain (ITOSPOP). *Minerva anestesiologica*, *78*(1), 15.
38. Ongoiba, O. (2013). Assessment and management of postoperative pain in the general surgery department of the GABRIEL TOURE UNIVERSITY HOSPITAL. Medical Thesis.
39. Meuzeubou, N. A (2021). Interest of the dexamethasome in the management of postoperative pain in orthopaedic and trauma surgery. Specialization thesis. Kati University Hospital, 24-25.
40. Lankoande, M. (2023). Indicators for the management of acute postoperative pain in orthopaedic surgery in Burkina Faso.RAMUR, 28 n°1.
41. Zakaria, S. (2020). Interest of the combination of lidocaine intravenous infusion and ketamine in the management of postoperative pain in major abdominal surgery by laparotomy. Specialization dissertation Senegal. N°357.P-42.
42. Tano. (2021). Predicting factors that determine patients' satisfacttion with post-operative pain management following abdominal surgeries at Komfo Anokye Teaching Hospital, Kumasi, Ghana. *PLOS ONE 16*(5), E0251979.
43. Diarra, M. D. (2013). Parietal infiltration of bupivacaine for postoperative analgesia in general surgery at the Gabriel Touré University Hospital.Thesis of medicine. Bamako.
44. Buli, B., Gashaw, A., Gebeyehu, G., Abrar, M., & Gerbessa, B. (2022). Patient satisfaction with post-operative pain management and associated factors among surgical patients at Tikur Anbessa Specialized Hospital: Cross-sectional study. *Annals of Medicine and Surgery*, *79*, 104087.
45. Eshete, M. T., Baeumler, P. I., Siebeck, M., Tesfaye, M., Haileamlak, A., Michael, G. G., ... & Irnich, D. (2019). Quality of postoperative pain management in Ethiopia: a prospective longitudinal study. *Plos one*, *14*(5), e0215563.
46. Houssaini, M. S. (2017). Postoperative analgesia in orthopedic traumatology. Thesis in medicine. Algeria. .n°132/17.P-28.
47. Badimi, S. (2023). Echo-guided ALR in limb surgery at the CHU Hôpital du Mali.Professional dissertation. Mali.
48. Teixeira, V. (2016). Assessment of postoperative pain on D+1 of patients in the outpatient surgery department at the Poitiers University Hospital. France.
49. Fletcher, D., Mardaye, A., Fermanian, C., & Aegerter, P. (2008). SFAR ALR Pain Committee. Evaluation of analgesia practices postopé_ratoire in France: national survey with analysis of differences in practice by type of institution. *Ann Fr Anesth Reanim, 27*, 700–8.
50. Kelly, W. D., Jackson, J. B., & Bian, J. (2023). The Cost of Multimodal vs Opioid Postoperative Pain Regimens for the Foot & Ankle Surgical Patient. *Foot & Ankle Orthopaedics*, *8*(1), 2473011423S00010.
51. Coley, K. C., Williams, B. A., DaPos, S. V., Chen, C., & Smith, R. B. (2002). Retrospective evaluation of unanticipated admissions and readmissions after same day surgery and associated costs. *Journal of clinical anesthesia*, *14*(5), 349-353.