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AUDIT

Use of diclofenac sodium suppositories in post operative pain management

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Introduction:
Per rectal suppository administration of diclofenac sodium is commonly used for post-operative pain relief. This audit was conducted to assess whether, patients were informed of administration of diclofenac sodium suppository and to find out whether they were questioned about contraindications and cautions for its use.

Method:
Audit conducted during five consecutive days in general surgical wards (n=16) in National Hospital Sri Lanka, among 150 patients on post-operative day one or two. Data extracted from bed head tickets and an interviewer-administered questionnaire.

Results:
Mean age of the population was 48.15yrs (SD=15.91), 51.3% being males and 70.7% had received diclofenac sodium suppository post-operatively. Of them 92.5% were not informed prior to administration of the suppository. Majority were not questioned about peptic ulcers (50.9%), bleeding disorders (72.6%), allergy for non steroidal anti-inflammatory drugs –NSAIDs - (50.0%) and renal impairment (62.2%), which are contraindications for the drug. Among those given diclofenac, 12.3% had asthma, 2.8% coagulation defects, 17% ischaemic heart disease, 11.3% peptic ulcer, 31.1% hypertension, 1.9% allergy to NSAIDs, 0.9% heart failure, 5.75% renal impairment which are contraindications for use of NSAIDs and 12.3% were elderly.

Conclusion:
Majority of patients are administered diclofenac suppository without prior consent and a considerable proportion of them have contraindications to the drug

Recommendation:
There is need for a guideline for prescription of diclofenac sodium suppositories in the post operative period.

Introduction

The goal for postoperative pain management is to reduce or eliminate pain and discomfort with minimum of side effects as cheaply as possible[1]. NSAIDs are prescribed commonly in mild to moderate pain[2]. Diclofenac is one such NSAID which has been shown to have analgesic effect in several situations, such as post operative pain after tonsillectomy[3], tooth extraction[4] and hip joint surgery[5].

In the pre operative period information should be provided about intra and post operative analgesia, techniques of sensitive nature such as the insertion of analgesic suppository[6] and check for

contraindications to NSAIDs and local anaesthetic techniques[7].

The relative contraindications for the use of the NSAIDs are[8]

- Impaired hepatic function, diabetes, bleeding or coagulation disorders, vascular disorders
- Operation where an absence of bleeding is important
- Non aspirin induced asthma
- Age>65, pregnancy, lactation
- Concurrent use of ACE inhibitors, potassium sparing diuretics, anticoagulant
- Absolute contraindications are [8].
- High risk of gastro-intestinal bleeding and ulceration
- Known hypersensitivity to NSAIDs
- Severe liver dysfunction
- Cardiac failure
- Dehydration,hypovolaemia, hypotension
- Hyperkalaemia
- Pre existing renal impairment
- Uncontrolled hypertension
- Aspirin induced asthma

The aim of this audit was to assess whether, patients were informed of diclofenac sodium suppository administration, and whether they were questioned about contraindications and cautions for its use and to evaluate the percentage of patients who had the contraindicated disease states.

Methods

The audit comprised a descriptive cross sectional study, which was carried out in all general surgical wards in the National Hospital of Sri Lanka. Study population was 150 patients who were in post operative day one or two, and who gave written consent to participate. Patients who were not able to communicate, mentally subnormal and patients who were not in post operative day one or two were excluded.

Data was extracted from bed head tickets and an interviewer administered questionnaire was also used. The audit was approved by the Ethics Review Committees of the National Hospital of Sri Lanka and the Faculty of Medicine, Colombo.

Results

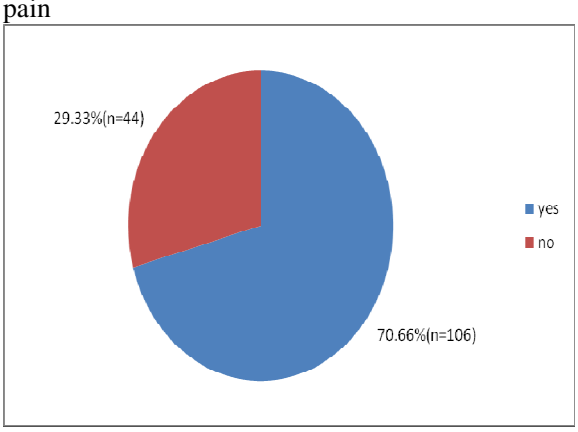
The study population comprised of 150 patients, of mean age of 48.15yrs (SD=15.91). Socio-demographic and basic clinical information of the study population are shown in Table 1.

Table 1: Socio-demographic and clinical data

Socio-demographic and Clinical data		Number	Percentage
Age	< 25 yrs	16	10.7
	26-35yrs	21	14.0
	36-45 yrs	24	16.0
	46-55yrs	40	26.7
	56-65yrs	28	18.7
	>66yrs	21	14.0
Sex	male	77	51.3
	female	73	48.7
Educational level	No schooling	02	1.3
	Grade 1-5	29	19.3
	Grade 5 10	34	22.7
	Grade 10-A/L	57	38.0
	Above A/L	28	18.7
Surgery	Minor	43	28.7
	Intermediate	62	41.3
	Major	40	26.7
	Major+	05	3.3
Type of anaesthesia	General	69	46.0
	Local	12	8.0
	Spinal	65	43.3
	Other	04	2.7

Among 150 patients 70.7% (n=106) received diclofenac sodium suppository post operatively.

Figure 1: Frequency of administration of diclofenac sodium suppository for post operative pain



Among patients who received the drug (n=106) the type of surgery and the type of anaesthesia are described in (Table 2 and 3).

Table 2: Type of surgery undergone by patient who had diclofenac sodium suppository postoperatively.

Type of surgery	Frequency	Percent
Grade 1 (minor)	19	17.9
Grade 2 (intermediate)	54	50.9
Grade 3 (major)	32	30.2
Grade 4 (major+)	1	.9
Total	106	100.0

Table 3: Administration of diclofenac according to the type of anaesthesia

Anaesthesia	Frequency	Percent
General	45	42.5
Local	3	2.8
Spinal	55	51.9
Other	3	2.8
Total	106	100.0

Majority of the study population received spinal or general anaesthesia. 65.2% under general anaesthesia and 84.1% under regional anaesthesia, received diclofenac sodium suppository and 75.0% under local anaesthesia were not given a suppository. (Table 4). So there is a significant association between usage of diclofenac post operatively and the type of anaesthesia (ψ^2 =19.03,df=2, p<0.05)

It is most used after spinal and general anaesthesia. Also it is widely used in intermediate and major type of surgery

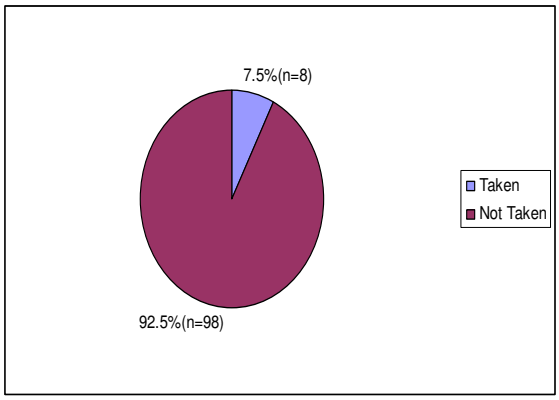
Table 4: Association between type of anaesthesia and administration of diclofenac sodium

			Type of anaesthesia			
			GA	LA	RA*	Total
DiclofenacGiven	No	Count	24	9	11	44
		% within type of anaesthesia	34.8%	75.0%	15.9%	29.3%
	Yes	Count	45	3	58	106
		% within type of anaesthesia	65.2%	25.0%	84.1%	70.7%
Total		Count	69	12	69	150
		% within type of anaesthesia	100.0%	100.0 %	100.0%	100.0%

* Spinal and other

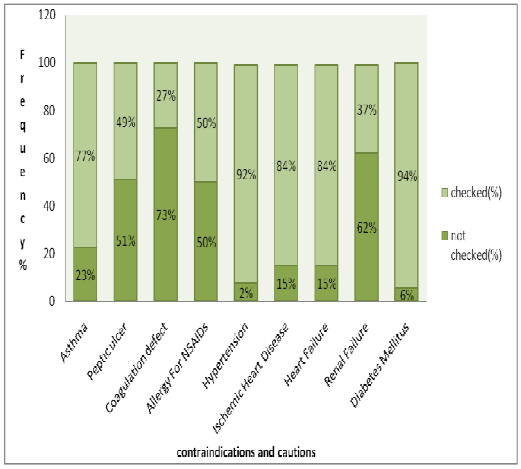
Among the patients who received diclofenac sodium (n=106) only 7.5% (n=8) had been informed prior to the administration of the suppository medication. Majority 92.5% (n=98) were not informed. Fig 2 describes the consent obtaining status prior to administration of the drug.

Figure 2: consent obtained prior to administration of the drug



More than 50% of patients who received diclofenac sodium were not questioned about a history of peptic ulcers, bleeding disorder, allergy for NSAIDs and renal impairment which are contraindications for the drug. (Figure 3)

Figure 3: Checking for cautions and ontraindications.



A considerable percentage of patients had relative contraindications. Table 4 shows the presence of physician diagnosed diseases or conditions which are contraindications or cautions for diclofenac sodium among the patients who were given that drug for post operative pain relief.

Table 4: Presence of disease among patients who received diclofenac sodium

Contraindications/cautions	Disease presence frequency (%)
Asthma	13(12.3%)
Peptic ulcer	12(11.3%)
Coagulation defect	3(2.8%)
Allergy for NSAIDs	2(1.9%)
Hypertension	33(31.1%)
Ischaemic heart disease	18(17%)
Heart failure	1(0.9%)
Renal failure	6(5.7%)
Diabetes Mellitus	35(33.5%)
Elderly (>65 yrs)	13(12.3%)

A remarkable percentage of patients who received the drug had absolute contraindications. About 11.3% (n=12) with peptic ulcer, 31.1% (n=33) with hypertension, 1.9% (n=2) with allergy to NSAIDs, 0.9% (n=1) with heart failure and 5.7% (n=6) with renal impairment had received the drug.

Discussion

As the audit population was selected from all general surgical wards it represents the patients who are undergoing general surgeries in National Hospital of Sri Lanka. In the present audit majority were given diclofenac sodium suppository as immediate post operative analgesia which indicates that it is a commonly used drug for post operative pain relief. It is noted that rectal administration of drugs is relatively unpopular in the UK[9].

The present study revealed that obtaining consent was practiced only in 7.5% of patients and about 92.5% were not informed prior to administration of the drug. This suggests inadequate attention for post operative pain management in the pre operative assessment of the patient. A range of analgesic options may be available for a particular type of surgery out of which a suitable regime can be selected considering the patients preference [2].
Diclofenac suppository has been used in 5.7% (n=6) with renal impairment while 62.2% (n=66) were not questioned about a history of renal failure prior to administration. In a double blind study it was shown that, all patients receiving diclofenac after oesophago- gastrectomy had significantly reduced urine out put and potassium excretion with tendency to hyperkalaemia[10]. It was also used in 12.3% (n=13) of elderly patients, 31.1% (n=33) patients with hypertension, 17% (n=18) ischaemic heart disease patients and 0.9% (n=1) patients with heart failure. As elderly people are most likely to have multiple organ dysfunction there is a greater potential for interference between NSAIDs and other drugs. NSAIDs may interfere with pharmacological control of hypertension and heart failure. The action of drugs such as frusemide depends on prostaglandin and the unbound concentrations of some NSAIDs are high in the elderly[11].

It was given in 11.3% (n=12) with peptic ulcer while 50.9% were not questioned about the disease. When comparing with other studies regarding NSAIDS use and peptic ulcer found that when indomethacin 50 mg was given three times daily all volunteers had endoscopic evidence of mucosal damage in both stomach and duodenum after 24 hrs[12]. Another study of NSAIDs and peptic ulcer disease found that after five days of administration of ketorolac (90mg) 'invasive' antral ulcers were found in 80% of subjects[13].

Conclusions

Diclofenac sodium suppository is used in majority (92.5 %) of patients without consent and without checking contraindications for the drug. A considerable (eg: peptic ulcer 11.3%, hypertension 31.1%) percentage of patients with contraindications or cautions have been given diclofenac.

Recommendations

There is a need for a guideline for prescription of diclofenac sodium suppositories in the post operative period. It is also important to educate doctors and nurses of its contraindications and the importance of obtaining consent.

References:

1. Charlton E. The management of postoperative pain. Update *Anaesthesia* 1997; **7**: 1-7.
2. Ejnell H., Bjorkman R., Wahlander L. and Hender J. Treatment of post operative pain with Diclofenac in uvulopalatopharyngoplasty. *British Journal of Anaesthesia* 1992; **68**:76-80.
3. Bone M.E., Fell D. A comparison of rectal diclofenac with intramuscular papavaretum or placebo for pain relief following tonsillectomy. *Anaesthesia* 1988; **43**: 277-280.
4. Henrikson P.A., Thilander H.and Wahlander L.A. Voltaren as an analgesic after surgical

removal of a lower wisdom tooth. *International Journal of oral surgery* 1985; **14**: 333-338.
5. Lindgren U., Djupsjo H. Diclofenac for pain after hip surgery. *Acta Orthopaedica Scandinavica* 1985; **56**: 28-31.
6. AAGBI guidelines for consent for anaesthesia 2006, Information to be provided to the patient. Page 14-16.
7. Sri Lankan National guidelines 2007. Ministry of Health and Nutrition. Management of acute post operative pain.
8. Royal college of surgeons and college of anaesthetists. Report of the working party of pain after surgery 1990.
9. Mitchell R.W.D. and Smith G. The control of acute post operative pain. *British Journal of Anaesthesia* 1998; **63**:147-158.
10. Power I., Cumming A.D., Pugh G.C., Effect of diclofenac on renal function and prostaglandin after surgery. *British Journal of Anaesthesia* 1992; **69:**451-6.
11. Gibson P., Weadington D. and Winney R.J. NSAIDs in the post operative period clinical expense and confirm risk. *British Medical Journal* 1993 Jul 24; **307**(6898):257-258.
12. Shorrock C.J. and Rees W.D.W. Mucosal adaptation to indomethacin induced gastric damage in man –Studies on morphology, blood flow and prostaglandin E2 metabolism. *Gut* 1992; **33**:164-169..14
13. Soll A.H., Wemstein W.M., Karata J and McCarthy D. NSAIDs and peptic ulcer disease. *Ann Intern Med* 1991; **16**: 385-409.

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