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COMPARISION OF TRANSDERMAL DICLEFENAC PATCH WITH INTRAMUSCULAR DICLOFENAC IN POST CAESAREAN SECTION PAIN RELEIF

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ABSTRACT **Objective** To asses the safety and efficacy of transdermal diclofenac patch in comparison to intramuscular Diclofenac in post caesarean section pain relief . Study Design 60 women of caesarean section were taken for randomised prospective study, women were divided randomly into two groups with similar demographic profile. Group A received transdermal Diclofenac patch and Group B received intramuscular diclofenac. Analgesic effect was compared in both groups. Results Transdermal diclofenac patch group had better pain relief and 85.2% women did not require any further analgesic whereas in intra muscular diclofenac group pain relief was not effective and all women required additional doses. Conclusion Transdermal diclofenac patch is a better, effective and convenient method of pain relief in post caesarean section pain.

KEYWORDS : Diclofenac ,intramuscular ,pain relief

INTRODUCTION

Diclofenac sodium is a non steroid anti inflammatory drug and is effective in the management of post operative pain relief. Diclofenac is formulated as a transdermal patch , which deliver the drug into systemic circulation though skin.

AIMS & OBJECTIVE

The aims of this study was to campare the analgesic and opoid sparing effect of diclofenac sodium intramuscular , with diclofenac patch in the management of post lower segment caeserian section pain relief.

At present, relief of post operative pain has become an indispensible component of our practice, as post operative pain relief is associated with attenuation of various respiratory circulatory metabolic and psychological complications.

Material & Methods

A randomised prospective study, was conducted in department of anaesthesia Rama Medical College, Kanpur and other associated hospital. With informed consent, 60 women who underwent lower segment caesarean section under spinal anaesthesia were taken for study. Hemodynamic. parameters, respiratory rate and duration of surgery were noted. Women were randomly divided into 2 groups - Both the groups were comparable in relation to demographic profile and intra operative
characteristics (Group A n=30 and Group B n =30) .

INCLUSION CRITERIA

Age 20 -45 years
A S A grade 1 & 2
Posted for elective surgery

EXCLUSION CRITERIA

Patient refusal History of allergy with NSAID Pt. with G I bleeding tendency,hepatic and renal disorder excluded from study.

Women in Group A (n=30) received Diclofenac patch 100 mg over the inner aspect of thigh immediately after surgery. Women in Group B (n=30) received inj. Diclofenac 75 mg intramuscular (as routinely used in our hospital). Patients were observed for first 24 hours in post operative period. Time when the women first reported moderate to severe pain (4 or more in VAS) at rest was noted, thereafter pain was assessed at 4,8,12,16,20 & 24 hrs post operatively using VAS. If the women reported their pain 4 or more at rest on 0 - 10 VAS they were given repeat dose of analgesic. If this regimen did not relieve their pain, they received, injection pentazocin (30 mg) promethazine (50 mg) intramuscularly. Patients were asked to grade their pain by pointing at a scale marked 0 - 10. A VAS of '0' was defined as no pain while '10' was defined as worst pain imaginable. Haemodynamics parameters at different time were noted in both groups and incidence of minor side effects like nausea, vomiting and itching at the site of application also noted.

We also observed for development of any major side effects (neurological, cardiovascular, gastrointestinal complications) Subjective assesment was done to evaluate patient satisfatction with pain control. women and investigatators were blinded to study. The results were analysed using unpaired 't' test and 'Chi square test. p value of <0.050 was considered satistically significant.

Results

Patients of both groups were comparable in respect to age, height, Weight and intra operative characteristics (Table I).

Majority of the women in group A (n=30), 85.2% did not required any additional analgesic up to 24 hrs. in post operative period, rest of women, 18.4% complained moderate to servere pain between 12-24 hrs and required additional analgesia. While in group B, 68% women complained of moderate to severe pain between 6-8 hrs of surgery and required additional dose. 25% women complained of pain between 8-12 hrs and rest 7% complained of pain after 12 hrs, 8 patients in this group also required inj. pentazonic and promethazine. (Table II) Post operative hemodynamic parameter were similar in both groups Incidence of nausea and vomiting was low and similar in both the group. 7.35% patient in group A reported mild tolerable itching over the skin where patch was applied. (Table III) The patient subjective report of satisfaction with pain management was superior in group A at 24 hrs Overall satisfaction with pain relief was 73.4% in group A while 49% in group B ($p < 0.05$). Transdermal patch application was more convenient and ssatisfactory in comparison to intramuscular route.(Table IV).

TABLE – 1 DEMOGRAPHIC PROFILE

Parameter	Group 'A' (n=30)	Group B (n=30)	Remarks

Age (yrs)	23.2 + 1.2	24.7 + 4.2	p>0.05
Weight (kg)	51.7+ 3.2	55.3+ 7.7	p>0.05
Height (cm)	151.03+ 11.3	153. 3+ 11.7	p>0.05
GravidaPrimi/Multi	18/12	19/11	p>0.05

TABLE – II FIRST PAIN PERCEPTION

Time at which women first complaints of moderate to severe pain (Post-operatively)	Group 'A' (n=30)	Group B (n=30)	Remarks
Within 4 hrs	0	0	
4-8 hrs	0	22	(73.3%)
8-12 hrs	0	6	(20.0%)
12 – 16 hrs	1(3.3%)	2(6.6%)	
16 – 20 hrs	2(6.6%)	0	
20-24 hrs	3(10.0%)	0	
Total	6(20.0%)	30(100%)	P<0.0001

Table – III SIDE EFFECTS

Parameter	Group 'A' (n=30)	Group B (n-30)	Remarks
E-mesis	3(10.0%)	5(16.6%)	p>0.05
Pain at the site of injection		12(40.0%)	P<0.05
Itching and Hyperemia at patch site	2(6.66%)		p>0.005

Table IV SUBJECTIVE SATISFACTION WITH PAIN MANAGEMENT

Time	Group 'A' (n=30)	Group B (n=30)	Remarks
At 6 hrs	28(93.33%)	3(10.0%)	P,0.0001)
At 12 hrs	21(70.0%)	16(53.3%)	P<0.003
At 24 hrs	18(60.0%)	15(50.0%)	P<0.01)

Discussion

The main aim of post operative pain relief is to provide subjective comfort, in addition to inhibiting nociceptive impulses caused by surgical trauma and to blunt autonomic as well as somatic reflexes to pain subsequently this will enhance restoration of function by allowing the patient to breath, cough and to be easily ambulant.

NSAIDs are effective in post operative pain relief not only throug peripheral action (inhibition of cyclo-oxygenase I & II) but also through central effects'.There are few studies on uses of transdermal NSAIDS on post operative pain relief.

NSAIDs are very effective analgesic in post operative pain, as shown in various studies" Diclofenac a NSAIDs has very few side effects and has good analgesic effect, is an useful drug in treatment of various pain disorders'.

The present study showed that transdermal diclofenac patch application in post operative period after caesarean section had very good analgesic effect. It reduced the need for further analgesia in imediate post operative period (upto 24 hrs) and is deviod of any sedative action. Use of opioids in post operative analgesia in post LSCS patient may produce drowsiness in post operative period which can delay initiation of breast feeding.

Patients were also very much satisfied with this mode of application it did not have any major side effects minor ailments like nausea, vomiting were not increased.

Transdermal patch did not produce any skin reaction at application site intramuscular inj. produced pain at site of injection.

Conclusion

The study concluded that application of Transdermal Diclofenac patch is very effective and safe method in post caesarean pain relief. As it also decreases the need for further analgesic so, it is more cost effective while its subjective satisfaction and convenience was immense and uncomparable to any route of analgesia.

References

1. Jurna 1, Brune K. Central effect of the non-steriod antiinflammatory agents, indomethacin, Ibuprofen, and Diclofenac, determined in C fibre-evoked activity in single neurones of the rat thalamus. (199) Pain, 41 (1): 71-80
2. 2- Liu K, Chia YY, Lo Y, Kan YY, Wang JJ, Ho ST. Effect.of preoperative transdermal ketoprofen on post hysterectomy pain(1997) Zhonghua Vi Xue Za Zhi (Taipei); 60 (6): 290-5
3. Saha SP, Bhattacharjee N, Biswas SC. Effect of transdermal Diclofenac patch on post caesarean section pain (2009) Asian Journal of Obst. & Gynae Practice, 1: 36-40.
4. Sunshine A, Olson NZ, Anagesic efficacy of ketprofen in postpartum, general surgery, and chronic, cancer pain (1988), J Clin Pharmacol ; 28 (12 Suppl) : S47-54
5. Kinsella J, Moffat AC, Patric JA, Prentice JW, Mc Ardle CS, Kenny GN, Ketorolac trometamol for post operative anagesic after orthopaedic surgery. (1992) Br J Anaesth; 69 (1) : 19-22
6. 6- MC Lintock TT, Kenny GN, Howie JC, Mc Ardle CS, Lawrie S, Aitken H. Assessment of the analgesic efficascy of nefopan hydrochloride after upper abdominal surgery: a stude using patient controlled analgesia. (1988) Br J Surg ; 75 (8)-81.
7. Moffat AC, Kenny GN, Prentice JW. Postoperative nefopam and diclofenac. Evaluation of their morphine-sparing effect after upper abdominal surgery. (1990) Anaesthesia; 45(4): 302-5.