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ROLE OF PERIOPERATIVE PROPHYLACTIC ANTIBIOTICS ON STATUS OF ABDOMINAL WOUND IN CAESAREAN SECTION AND ABDOMINAL HYSTERECTOMY

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ABSTRACT: BACKGROUND: Unhealthy wound is a constant headache for the surgeons; for which infection is the primarily important factor. Perioperative antibiotic regimen are gaining popularity in this field. **AIMS:** (1) To compare between the effect of perioperative three doses antibiotic prophylaxis and conventional multiple doses antibiotic prophylaxis on status of abdominal wound after caesarean section and abdominal hysterectomy. (2) To detect as far as possible the factors responsible for impaired abdominal wound healing after caesarean section and abdominal hysterectomy. Design: Randomized controlled trial. **METHODS AND MATERIAL:** All subjects were randomly assigned to one of two groups by computer software generated random number that was placed into consecutively number opaque packed seal envelope. Sample size was calculated as per hospital prevalence rate. Case selection was done according to the inclusion & exclusion criteria. Post-operative wound status was thoroughly inspected. **STATISTICAL ANALYSIS USED:** Categorical variable was expressed as number of cases & percentage of cases; and compared across the two groups using Pearson's Chi square as the test for independence of attributes. The statistical software SPSS version 16 was used. All statistical tests were evaluated at the 0.05 significance level. Results: Perioperative single regimen cefotaxime sub-group was found most acceptable. Incidence of unhealthy wound is slightly more in multiple dose conventional antibiotics group, in un-booked cases, Muslim community, low Hb cases, obese subjects, cases undergone emergency procedure, sub cut skin closure etc. But none of them were statistically significant. Staphylococcus was the most common organism isolated. **CONCLUSIONS:** Perioperative antibiotic prophylaxis is quite comparable with conventional antibiotic prophylaxis but more cost effective with better compliance.

KEYWORDS: Unhealthy wound, Infection, Perioperative antibiotic prophylaxis, Cost effective, Better compliance.

INTRODUCTION: Infection is the single most important cause of delay in wound healing. In majority of operative cases, commensal organisms are responsible for wound complications. Aerobes mainly comprise of group A, B, D streptococci, enterococci, gram negative bacteria, staphylococcus aureus etc. Anaerobes include peptostreptococci, bacteroid fragilis, clostridium species, fusobacterium species etc.

Role of antimicrobial prophylaxis is to achieve sufficient antibiotic tissue concentration before possible wound contamination. It is recommended to administer antibiotic intravenously before the skin incision with exception in the case of caesarean section where antibiotics are usually withheld till umbilical cord-clamping. The rationale has been unnecessary drug transfer to the fetus and subsequent masking of infection to the neonate.

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Scientific knowledge expanded in the 20th century, so did the advancement of infection control with the use of prophylactic antibiotic drugs, heat sterilization of instruments and antiseptics.

Antibiotics fight infection internally and aseptic methods such as sterilization prevent microbes from existing in a given area. With advent of newer antibiotics and better studies, the incidence of wound infection has gone down; but it still remains one of the most serious complication of caesarean section and other obstetric and gynaecological surgeries.

It has been a continuous debate whether prophylactic single dose or perioperative three doses antibiotics is equally effective as compare to long term combination of antibiotics or not. Both cefotaxime and amoxicillin-clavulanic acid are being widely used for prophylaxis in caesarean delivery and abdominal hysterectomy, but with different cost. So this study was undertaken to compare the efficacy of intravenous three doses perioperative antibiotic versus multiple antibiotic doses in both caesarean section and abdominal hysterectomy cases; and also to compare the efficacy of two different antibiotic groups & review the impact of other factors on wound health.

MATERIAL & METHODS: The study was a randomized controlled trial conducted over one year (June'12 to May'13) at BR Singh Hospital, which is a tertiary care railway employee hospital, situated at central Kolkata, West Bengal, India - catchment area being in & outside the city from different districts; referral cases are mostly getting admitted & having necessary follow-up round the year.

The study was approved by hospital ethical committee. Once informed consent was obtained, subject was randomly assigned to one of two groups by computer software generated random number that was placed into consecutively number opaque packed seal envelope:

Group (1): Those who received perioperative (3 doses) antibiotic prophylaxis.

Group (2): Those who received conventional antibiotic prophylaxis for 5 days.

Group (1) was further subdivided into the following 2 sub-groups:

1A) Those who received IV Cefotaxime (1 gm) prophylaxis.

1B) Those who received IV Amoxicillin + Clavulanic acid (1.2 gm) prophylaxis.

- 1st dose - Just after cord clamping in caesarean section cases & 1 hr before skin incision in abdominal hysterectomy.
- 2nd dose - 12 hour after 1st dose.
- 3rd dose - 24 hour after 1st dose.

Group (2) was further subdivided into the following 2 sub-groups:

2A) Those who received IV Cefotaxime (1 gm) prophylaxis

2B) Those who received IV Amoxicillin + Clavulanic acid (1.2 gm) prophylaxis

- 1st dose - Just after cord clamping in caesarean section cases & 1 hr before skin incision in abdominal hysterectomy.
- Subsequent doses – twice daily for 5 days.

[Metronidazole 100cc IV infusion (total 3 doses 8 hours apart) was given to all patients (1A, 1B, 2A, 2B) for anaerobic coverage]

Cases undergone elective caesarean section or undergone abdominal hysterectomy for non-malignant conditions was included in the study.

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Cases undergone emergency caesarean section, already under antibiotic prophylaxis for other systemic infections, known allergic to the drugs administered in the study, known diabetic, undergone abdominal hysterectomy for malignant conditions were excluded from the study.

Abdominal wound was inspected every day for soakage of adhesive dressings, indurations around dressing, redness, discharge (bloody/ sero-sanguineous), pain/ tenderness around wound & gaping after stitch removal. Fever if present was noted & evaluated properly.

Based on previous studies if infection rate in group (1) 16% and group (2) is 4%, a total of 99 subject will be required per group to detect such a differences with 5% probability of type I error ($\alpha=0.05$ and 80% power). Considering inclusion and exclusion criteria, we took 100 cases in each group undergone caesarean section, 50 in each sub groups (1A, 1B, 2A, 2B). In case of abdominal hysterectomy, due to less patients' turnover in BR Singh railway employee's hospital, a total of 100 cases was taken and comparison done only between two sub-groups (1A & 2A) of 50 cases each.

Categorical variable was expressed as number of patients & percentage of patients; and compared across the two groups using Pearson's Chi square as the test for independence of attributes. Continuous variable was expressed as Mean $\pm$ standard deviation and compared across the groups using unpaired t test. The statistical software SPSS version 16 was used for the analysis.

An alpha level of 5% was taken i.e. any p value less than 0.05 has been considered as significant.

RESULTS: For caesarean section cases, table 1 show that the incidence of unhealthy wound is slightly more (8.0%) in multiple dose post-operative antibiotics group (2) than prophylactic (6.0%) group (1). But the difference is not statistically significant (Pearson $\chi^2 = 0.307$; $P = 0.579$).

Table 2 clearly shows that the cost is least in cefotaxime group (1A). On the other hand, from table 3, we can see that the incidence of unhealthy wound in group 1A is least (4%). Thus to conclude, for caesarean cases, group 1A prophylaxis is most acceptable. But applying chi square test ($\chi^2 = 1.536$), $P = 0.674$, which means difference in incidence is not statistically significant.

From table 4, we can find that out of 149 booked cases, only 9 had unhealthy wound (6%) when abdominal stitches were cut, whereas the incidence of unhealthy wound among un-booked cases was 5 out of 51 i.e. 9.8%. But none is statistically significant as P value is 0.363.

Table 5 shows that incidence of healthy wound is more in Hindu Community than that of Muslim Community. But unhealthy wound is only negligibly more in Muslim community (8.2% as compare to 6.1%).

Table 6 shows that the incidence of unhealthy wound is more in higher age group (17.4%); Table 7 clearly shows that the incidence of unhealthy wound is more in multigravida. But none is statistically significant (P is 0.105 & 0.386 respectively).

Table 8 clearly depicts that the incidence of unhealthy wound is more in patients with previous h/o caesarean section (6 unhealthy wound out of 61 cases 9.8%), that in patients with h/o no CS before (8 out of 139) (5.8%).

Table 9 shows that the chance of unhealthy wound is more when CS was done as emergency procedure (7.8%, out of 142 cases, unhealthy wound was found in 12 cases) than when it was done as elective procedure (4.3%, out of 44 cases, wound gaping was found in 2 cases only).

Table 10 shows that in our study incidence of unhealthy wound is more (7.3%, 3 out of 41) when skin suture was sub-cut than when it is with interrupted mattress (6.9%, 11 out of 159).

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Table 11 clearly notifies the difference between low and high Hb level on the wound status after caesarean section. Where patients with $Hb \leq 10\%$ have 12 unhealthy wound (9.4%) out of 127 patients. Those with $Hb > 10\%$ have 2 cases of unhealthy wound out of 73 cases studied (2.7%).

Table 12 shows that the incidence of unhealthy wound is more in obese patient (10.9%), as compare to non-obese patient (5.8%).

Table 13 shows that the incidence of fever is more in 1A (14%) and 2A (10%) groups than 1B and 2B (both 6%) groups, but none of them statistically significant ($P = 0.443$).

Incidence of unhealthy wound (table 14) is more in group (12%) of patients were history of rupture membrane >12 hours duration before caesarean section as compare to group (5.4%) of patients were history of membrane ruptured <12 hours duration, but none of them statistically significant. Out of 200 cases under our study, 101 cases did not have any membrane rupture when CS was done.

Table 15 shows the reports of swab culture/sensitivity; each taken from 14 different unhealthy wounds of caesarean cases in our study. Staphylococcus was the most common organism isolated from culture of unhealthy wound.

For abdominal hysterectomy cases, table 16 shows that the incidence of unhealthy wound in 2A group (10%) is slightly more than that of group 1A (6%); but this is not statistically significant ($\chi^2 = 0.543$ & $p = 0.461$).

Table 17 depicts that the incidence of unhealthy wound in Muslim is 10.3% which is slightly more than Hindu 6.6%, but none of them statistically significant ($P = 0.506$).

Table 18 shows that the incidence of unhealthy wound is slightly more in sub cut skin closure (10%) as compare to interrupted mattress one (7.5%), but none of them statistically significant ($\chi^2 = 0.136$ & $p = 0.712$).

Table 19 showed that incidence of unhealthy wound is more in obese (13.3%) as compare to non-obese (7.1%), but none of them statistically significant ($P = 0.409$).

Table 20 clearly indicates that incidence of unhealthy wound is slightly more in patients with haemoglobin level ≤ 10 as compare to patients with haemoglobin level >10 (8.3% versus 7.5%), though this study is not statistically significant as p value is 0.880.

Table 21 shows that the incidence of unhealthy wound is more among patient having previous history of open abdominal surgery as compare patient not having h/o previous such surgery (9.1% versus 7.5%), though this is also not statistically significant.

From table 22, it is clear that most common organism isolated from infected unhealthy wound of hysterectomy cases is Staphylococci organism followed by Pseudomonas and E.coli.

DISCUSSION: Our study for caesarean cases shows that peri-operative & conventional post-operative antibiotic prophylaxes are equally effective; and cefotaxime regimen is comparable to co-amoxiclav regimen as the difference in incidence of unhealthy wound in either case is not statistically significant. Considering the cost, peri-operative cefotaxime is most cost effective. Kamilya et al,¹ Hopkins & Smail,² studies support the similar view. Peri-operative antibiotics are also strongly supported in literature for cases of abdominal hysterectomy.

Our study shows that the incidence of unhealthy wound was more when CS was done on un-booked cases. This is ascribed to be due to increased supplement of nutritional elements, early diagnosis of concomitant medical disease during antenatal check-up.

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Our study reveals that with antibiotic prophylaxis, the chance of wound infection was more in Muslim community than that of Hindu community. This may be ascribed to better socioeconomic status of the Hindus in the locality than that of Muslims.

The incidence of unhealthy wound was least in age between 20 to 30 and highest in age group > 30. This is ascribed to be due to increased incidence of chronic medical disease like diabetes, hypertension as the women grows older.

The elderly population (people over 60 years of age) is growing faster than any other age group (World Health Organization [WHO, www.who.int/topics/ageing]), and increased age is a major risk factor for impaired wound healing.

Many clinical and animal studies at the cellular and molecular level have examined age-related changes and delays in wound healing. It is commonly recognized that, in healthy older adults, the effect of aging causes a temporal delay in wound healing, but not an actual impairment in terms of the quality of healing (Gosain and DiPietro, 2004; Keylock et al., 2008).³⁻⁴

Swift et al⁵ states that delayed wound healing in the aged is associated with an altered inflammatory response such as delayed T-cell infiltration into the wound area with alterations in chemokine production and reduced macrophage phagocytic capacity. Swift et al in another study⁶ clarifies that delayed re-epithelialization, collagen synthesis, and angiogenesis have also been observed in aged mice as compared with young mice. Overall, there are global differences in wound healing between young and aged individuals.

Our study shows that the chance of wound gaping is more in case of emergency caesarean section. This is ascribed due to co-existence of rupture of membrane, prolonged labour, and difficult surgery along with emergency caesarean section. Chance of wound sepsis cannot be totally eliminated even by antibiotic prophylaxis.

In our study, incidence of unhealthy wound is more when skin has been sutured as subcutaneous suture rather than interrupted mattress. This is ascribed to improper surgical technique while suturing skin resulting in failure to obliterate the potential dead space in between two skin flaps.

Our study shows incidence of unhealthy wound is more in obese (10.9%) patients than non-obese (5.8%) patients in both caesarean section and abdominal hysterectomy cases. Eric et al⁷, David et al⁸ studies consolidate the view.

In the present study, it came out that when all the 4 antibiotic prophylaxis regimes i.e. Group 1A, Group 1B, Group 2A & Group 2B was given, chance of wound infection was more when Hb level of the patient was less than or equal to 10 gm% than when it is more than 10 gm%. Iron is required for the hydroxylation of proline and lysine, and, as a result, severe iron deficiency anemia can result in impaired collagen production (Shepherd⁹, 2003; Arnold and Barbul¹⁰ 2006; Campos et al.¹¹ 2008).

In wounds where oxygenation is not restored, healing is impaired. Temporary hypoxia after injury triggers wound healing, but prolonged or chronic hypoxia delays wound healing (Bishop,¹² 2008; Rodriguez et al.¹³ 2008). The study is in conformity with previous review of foreign literature that health of wound is a function of Hb level.

In our study, the incidence the incidence of wound sepsis was more when CS was done on a post CS woman than when it was done on women with no previous H/O caesarean section. According to the literature, this is ascribed to be due to decreased vascularity of the scar tissue through which a surgeon has to approach when cutting through the abdomen.

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Marshall et al¹⁴ similarly concluded that serious maternal morbidity progressively increased as the number of previous cesarean deliveries increased.

Lastly from our study, it is evident that commonest bacteria isolated from unhealthy wound of caesarean section & abdominal hysterectomy is staphylococcus. This was followed by decreasing incidence of pseudomonas, E.coli, enterococcus, anaerobic bacteria. Staphylococcus aureus (S. aureus), Pseudomonas aeruginosa (P. aeruginosa), and β -hemolytic streptococci are common bacteria in infected and clinically non-infected wounds (Edwards and Harding¹⁵ 2004; Davis et al.¹⁶ 2008).

P. aeruginosa and Staphylococcus appear to play an important role in bacterial infection in wounds. Many chronic ulcers probably do not heal because of the presence of biofilms containing P. aeruginosa, thus shielding the bacteria from the phagocytic activity of invading polymorphonuclear neutrophils (PMNs). This mechanism may explain the failure of antibiotics as a remedy for chronic wounds (Bjarnsholt et al,¹⁷ 2008).

CONCLUSION: Perioperative three doses antibiotic prophylaxis by 3rd generation cephalosporin is quite comparable with conventional multiple doses antibiotic prophylaxis but more cost effective. Moreover it requires only three doses, thereby improving compliance.

- Factors like anemia, multiparity, low socioeconomic status, elderly age, obesity, post-laparotomy, prolonged rupture of membrane, improper skin closure technique etc. still adversely affect wound status despite prophylactic antibiotics.
- With the use of proper asepsis, OT sterilization, proper apposition of cut tissue margin and following proper procedures along with antibiotics, unhealthy wound after caesarean section and abdominal hysterectomy can be prevented to some extent.

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TABLES FOR CAESAREAN SECTION CASES

			Antibiotic		Total
			Perioperative Prophylactic Antibiotic (1A+1B)	Conventional Prophylactic Antibiotic (2A+2B)	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	94	92	186
		% within Antibiotic	94.0%	92.0%	93.0%
	Unhealthy Wound	Count	6	8	14
		% within Antibiotic	6.0%	8.0%	7.0%
Total		Count	100	100	200
		% within Antibiotic	100.0%	100.0%	100.0%

TABLE 1: STATUS OF WOUND ON THE DAY OF STITCH CUT

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Name of groups	Total cost of prophylactic medications
Group 1A (Perioperative 3 doses <u>cefotaxime</u> prophylaxis)	Rs 111
Group 1B (Perioperative 3 doses amoxicillin + <u>clavulanic acid</u>)	Rs 147
Group 2A (Multiple doses <u>cefotaxime</u> , total 10 doses)	Rs 370
Group 2B (Multiple doses amoxicillin + <u>clavulanic acid</u> , total 10 doses)	Rs 490
TABLE 2: COMPARISON OF TOTAL EXPENDITURE (TO BUY ANTIBIOTICS**) AMONG FOUR (1A, 1B, 2A, 2B) STUDY GROUPS	

** IV Metronidazole (three doses) cost was not included as it was same for all groups

** Price list in round figure as supplied for Indian Railways Hospital

			GROUP				Total
			1A	1B	2A	2B	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	48	46	45	47	186
		% within GROUP	96.0%	92.0%	90.0%	94.0%	93.0%
	Unhealthy Wound	Count	2	4	5	3	14
		% within GROUP	4.0%	8.0%	10.0%	6.0%	7.0%
Total		Count	50	50	50	50	200
		% within GROUP	100.0%	100.0%	100.0%	100.0%	100.0%
TABLE 3: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO DIFFERENT ANTIBIOTIC GROUPS							

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			BOOKED / UNBOOKED		Total
			BOOKED	UNBOOKED	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	140	46	186
		% within B/UN	94.0%	90.2%	93.0%
	Unhealthy Wound	Count	9	5	14
		% within B/UN	6.0%	9.8%	7.0%
Total		Count	149	51	200
		% within B/UN	100.0%	100.0%	100.0%

TABLE 4: STATUS OF WOUND ON THE DAY OF STITCH CUT (* BOOKED / UNBOOKED)

			RELIGION		Total
			HINDU	MUSLIM	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	108	78	186
		%within RELIGION	93.9%	91.8%	93.0%
	Unhealthy Wound	Count	7	7	14
		%within RELIGION	6.1%	8.2%	7.0%
Total		Count	115	85	200
		% within RELIGION	100.0%	100.0%	100.0%

TABLE 5: EFFECT OF RELIGIOUS COMMUNITY ON WOUND STATUS

			AGE			Total
			< 20 yrs	20 - 30 yrs	> 30 yrs	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	4	163	19	186
		% within AGE	100.0%	94.2%	82.6%	93.0%
	Unhealthy Wound	Count	0	10	4	14
		% within AGE	.0%	5.8%	17.4%	7.0%
Total		Count	4	173	23	200
		% within AGE	100.0%	100.0%	100.0%	100.0%

TABLE 6: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO DIFFERENT AGE

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			Gravida		Total
			PRIMI	MULTI	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	102	84	186
		% within Gravida	94.4%	91.3%	93.0%
	Unhealthy Wound	Count	6	8	14
		% within Gravida	5.6%	8.7%	7.0%
Total		Count	108	92	200
		% within Gravida	100.0%	100.0%	100.0%

TABLE 7: COMPARISON OF CAESAREAN SECTION WOUND HEALING IN BETWEEN PRIMIGRAVIDA AND MULTIGRAVIDA

			CS		Total
			POST CS	NO POST CS	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	55	131	186
		% within CS	90.2%	94.2%	93.0%
	Unhealthy Wound	Count	6	8	14
		% within CS	9.8%	5.8%	7.0%
Total		Count	61	139	200
		% within CS	100.0%	100.0%	100.0%

TABLE 8: COMPARISON ON STATUS OF WOUND BETWEEN CS PATIENTS WITH PREVIOUS CAESAREAN SECTION AND THOSE WITH NO CS BEFORE

			TYPE OF CS		Total
			ELECTIVE CS	EMERGENCY CS	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	44	142	186
		% within TYPE OF CS	95.7%	92.2%	93.0%
	Unhealthy Wound	Count	2	12	14
		% within TYPE OF CS	4.3%	7.8%	7.0%
Total		Count	46	154	200
		% within TYPE OF CS	100.0%	100.0%	100.0%

TABLE 9: COMPARISON REGARDING THE STATUS OF WOUND BETWEEN EMERGENCY AND ELECTIVE CAESAREAN CASES

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			SKIN SUTURE		Total
			SUBCUT	MATTRESS	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	38	148	186
		% within SKIN SUTURE	92.7%	93.1%	93.0%
	Unhealthy Wound	Count	3	11	14
		% within SKIN SUTURE	7.3%	6.9%	7.0%
Total		Count	41	159	200
		% within SKIN SUTURE	100.0%	100.0%	100.0%

TABLE 10: STUDY COMPARING THE IMPACT OF TYPE OF SKIN STITCH - SUBCUT SUTURE VS INTERRUPTED MATTRESS ON ABDOMINAL WOUND HEALING

			HB LEBEL PERIOPERATIVE		Total
			≤10	>10	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	115	71	186
		% within HB LEBEL PERIOPERATIVE	90.6%	97.3%	93.0%
	Unhealthy Wound	Count	12	2	14
		% within HB LEBEL PERIOPERATIVE	9.4%	2.7%	7.0%
Total		Count	127	73	200
		% within HB LEBEL PERIOPERATIVE	100.0%	100.0%	100.0%

TABLE 11: EFFECT OF HB% LEVEL ON STATUS OF POST CAESAREAN SECTION WOUND

			OBESITY(BMI> 30)		Total
			NIL	YES	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	145	41	186
		% within OBESITY	94.2%	89.1%	93.0%
	Unhealthy Wound	Count	9	5	14
		% within OBESITY	5.8%	10.9%	7.0%
Total		Count	154	46	200
		% within OBESITY	100.0%	100.0%	100.0%

TABLE 12: STATUS OF WOUND ON THE DAY OF STITCH CUT IN OBESITY (BMI > 30)

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			GROUP				Total
			1A	2A	1B	2B	
POST OP FEVER IF ANY	NO	Count	43	45	47	47	182
		% within GROUP	86.0%	90.0%	94.0%	94.0%	91.0%
	YES	Count	7	5	3	3	18
		% within GROUP	14.0%	10.0%	6.0%	6.0%	9.0%
Total		Count	50	50	50	50	200
		% within GROUP	100.0%	100.0%	100.0%	100.0%	100.0%
TABLE 13: POST OP FEVER IF ANY IN RELATION TO DIFFERENT GROUP OF ANTIBIOTICS							

			Rupture of Membrane		Total
			<12	>12	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	70	22	92
		% within Rupture of Membrane	94.6%	88.0%	92.9%
	Unhealthy Wound	Count	4	3	7
		% within Rupture of Membrane	5.4%	12.0%	7.1%
Total		Count	74	25	99
		% within Rupture of Membrane	100.0%	100.0%	100.0%

TABLE 14: EFFECT OF EARLY AND PROLONGED RUPTURE OF MEMBRANES ON STATUS OF CAESAREAN SECTION WOUND

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			STATUS OF WOUND ON THE DAY OF STITCH CUT		Total
			Healthy Wound	Unhealthy Wound	
CULTURE/ SENSITIVITY FROM WOUND DISCHARGE IF ANY	ANAEROBE	Count	0	1	1
		%	0.0%	7.1%	.5%
	E COLI	Count	0	2	2
		%	0.0%	14.3%	1.0%
	ENTEROCOCCUS	Count	0	1	1
		%	0.0%	7.1%	.5%
	NO ORGANISMS	Count	186	2	188
		%	100.0%	14.3%	94.0%
	PSEUDOMONAS	Count	0	3	3
		%	0.0%	21.4%	1.5%
	STAPHYLOCOCCUS	Count	0	5	5
		%	0.0%	35.7%	2.5%
Total		Count	186	14	200
		%	100.0%	100.0%	100.0%

TABLE 15: BACTERIA POPULATION ISOLATED FROM UNHEALTHY WOUND

TABLES FOR ABDOMINAL HYSTERECTOMY CASES

			GROUP		Total
			1A	2A	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	47	45	92
		% within GROUP	94.0%	90.0%	92.0%
	Unhealthy Wound	Count	3	5	8
		% within GROUP	6.0%	10.0%	8.0%
Total		Count	50	50	100
		% within GROUP	100.0%	100.0%	100.0%

TABLE 16: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO DIFFERENT TWO GROUPS OF ANTIBIOTICS

ORIGINAL ARTICLE

			RELIGION		Total
			HINDU	MUSLIM	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	57	35	92
		% within RELIGION	93.4%	89.7%	92.0%
	Unhealthy Wound	Count	4	4	8
		% within RELIGION	6.6%	10.3%	8.0%
Total		Count	61	39	100
		% within RELIGION	100.0%	100.0%	100.0%

TABLE 17: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO RELIGION

			SKIN SUTURE		Total
			SUBCUT	MATTRESS	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	18	74	92
		% within SKIN SUTURE	90.0%	92.5%	92.0%
	Unhealthy Wound	Count	2	6	8
		% within SKIN SUTURE	10.0%	7.5%	8.0%
Total		Count	20	80	100
		% within SKIN SUTURE	100.0%	100.0%	100.0%
TABLE 18: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO TYPE OF SKIN SUTURE (SUBCUT VS INTERRUPTED MATTRESS)					

			OBESITY (BMI > 30)		Total
			NIL	YES	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	79	13	92
		% within OBESITY	92.9%	86.7%	92.0%
	Unhealthy Wound	Count	6	2	8
		% within OBESITY	7.1%	13.3%	8.0%
Total		Count	85	15	100
		% within OBESITY	100.0%	100.0%	100.0%

TABLE 19: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO OBESITY					
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ORIGINAL ARTICLE

			HB LABEL		Total
			≤10	>10	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	55	37	92
		% within HB LABEL PERIOPERATIVE	91.7%	92.5%	92.0%
	Unhealthy Wound	Count	5	3	8
		% within HB LABEL PERIOPERATIVE	8.3%	7.5%	8.0%
Total		Count	60	40	100
		% within HB LABEL PERIOPERATIVE	100.0%	100.0%	100.0%

TABLE 20: STATUS OF WOUND ON THE DAY OF STITCH CUT IN RELATION TO HB LABEL PERIOPERATIVE PERIOD

			H/O OF PREVIOUS ABDOMINAL SURGERY		Total
			NIL	YES	
STATUS OF WOUND ON THE DAY OF STITCH CUT	Healthy Wound	Count	62	30	92
		% within H/O OF PREVIOUS ABDOMINAL SURGERY	92.5%	90.9%	92.0%
	Unhealthy Wound	Count	5	3	8
		% within H/O OF PREVIOUS ABDOMINAL SURGERY	7.5%	9.1%	8.0%
Total		Count	67	33	100
		% within H/O OF PREVIOUS ABDOMINAL SURGERY	100.0%	100.0%	100.0%

TABLE 21: STATUS OF WOUND ON THE DAY OF STITCH CUT IN
RELATION TO H/O OF PREVIOUS OPEN ABDOMINAL SURGERY

ORIGINAL ARTICLE

			STATUS OF WOUND ON THE DAY OF STITCH CUT		Total
			Healthy Wound	Unhealthy Wound	
CULTURE/ SENSITIVITY FROM WOUND DISCHARGE IF ANY	E.COLI	Count	0	2	2
		% within STATUS OF WOUND ON THE DAY OF STITCH CUT	.0%	25.0%	2.0%
	NO	Count	92	0	92
		% within STATUS OF WOUND ON THE DAY OF STITCH CUT	100.0%	.0%	92.0%
	PSEUDOMONAS	Count	0	2	2
		% within STATUS OF WOUND ON THE DAY OF STITCH CUT	.0%	25.0%	2.0%
	STAPHYLOCOCCUS	Count	0	4	4
		% within STATUS OF WOUND ON THE DAY OF STITCH CUT	.0%	50.0%	4.0%
Total		Count	92	8	100
		% within STATUS OF WOUND ON THE DAY OF STITCH CUT	100.0%	100.0%	100.0%

Table 22: STATUS OF WOUND ON THE DAY OF STITCH CUT
***CULTURE/SENSITIVITY FROM WOUND DISCHARGE IF ANY**

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