Vaginal Cleansing prior to Cesarean Section and Post Operative Infectious Morbidity

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Vaginal Cleansing Prior to LSCS & Post Operative Infectious Morbidity

Declaration of interests: None
Cesarean sections account for approximately 29.1% of deliveries in United States and 21.5% in England.

According to hospital-based studies, the rate of caesarean section in Pakistan ranges from 21-40%.
Vaginal Cleansing Prior to LSCS & Post Operative Infectious Morbidity

- Post-operative infectious morbidity is a significant complication of caesarean delivery despite widespread use of prophylactic antibiotics.
Post Operative Infectious Morbidity

- endometritis
- wound infection
- maternal fever
- endometritis
Endometritis (most common)

10 times more common in cesarean vs. vaginal del.

Infectious morbidity occurs in 6-27% of cesarean sections

Complications e.g. bacteremia, sepsis, peritonitis and intra-abdominal abscess
Post Operative Infectious Morbidity: Risk Factors

- Repeated vaginal examinations
- Absence of prophylactic antibiotics
- Prolonged duration of active labor
- Prolonged rupture of membrane
- Internal fetal monitoring
Post Operative Infectious Morbidity: Pathway Involved

- Bacteria from lower genital tract
- Antibiotic resistant bacteria
- Failure of antibiotic prophylaxis
Strategies to reduce Post-operative Infections

• Modifications of surgical techniques
• Different methods of placental delivery
• Different positions during incision repair for uterus

• Cleansing of all body surfaces that are in contact during a surgical procedure
OBJECTIVE:

To compare frequency of post-operative infectious morbidity in patients undergoing emergency cesarean section with and without immediate pre-operative vaginal cleansing.
Definitions of post operative infectious morbidity for the study

Febrile morbidity
- Oral temperature 38°C or more after 24 hours of cesarean delivery

Endometritis
- Oral temperature 38.4°C excluding first 24 hours with uterine tenderness and foul smelling lochia clinically up to three weeks postoperatively.

Wound complications
- Diagnosed if there is any serous discharge, blood collection or break in incision line clinically in postoperative period up to three weeks
Patients and Methods

SETTING: MCHC, PIMS, Islamabad

DURATION: Six months

STUDY DESIGN: Randomized Controlled Trial

SAMPLING TECH: Non probability consecutive
Patients and Methods

• A total of 434 patients were enrolled in the study with 217 in each group.

• Group A had 217 women receiving vaginal cleansing with pyodine in addition to routine vulval and abdominal scrubbing.

• Group B had 217 women receiving only routine vulval and abdominal scrubbing.
Patients and Methods

INCLUSION CRITERIA:

• Women undergoing emergency cesarean section in MCH unit1 PIMS during study period

• In labor for more than 6 hours after hospital admission with or without rupture of membranes.
Patients and Methods

EXCLUSION CRITERIA:

- Gestational diabetes mellitus
- Anemia (Hb < 7g/dl)
- Placenta previa (on ultrasound)
- Obstructed labor or suffering from any febrile condition
Patients and Methods

DATA ANALYSIS

- Data was analyzed using SPSS version 10.
- Quantitative data like age and gestational age was presented as means and standard deviations.
- Qualitative variables like fever, endometritis and wound infection was measured as frequency and percentages.
- Chi-square test was applied to compare the morbidity in two groups. Effect modifiers like age, gestational age, parity, labour duration and PROM was controlled by stratification.
- Post stratification chi square test was applied. A p-value of ≤ 0.05 was considered statistically significant.
Results
Demographics

Age: 28.5 (GROUP A), 27.4 (GROUP B)
Gestational Age: 38.5 (GROUP A), 37 (GROUP B)

N=217
Comparison of post operative morbidity

GROUP A
- 9 (4.1%)

GROUP B
- 16 (7.4%)

P value = 0.149
Comparison of Post Operative Morbidity

Endometritis

- **Group A**: 3 (1.4%)
- **Group B**: 19 (8.8%)

P value 0.000
Comparison of Post Operative Morbidity

WOUND INFECTION

GROUP A
3 (1.4%)

GROUP B
8 (3.7%)

P value = 0.126
Stratification of Fever, Endometritis & Wound infection With respect to Duration of Labour and PROM
Correlation Of Fever With PROM

GROUP A
- 61 (87.1%)
- 9 (12.9%)

GROUP B
- 15 (48.4%)
- 16 (51.6%)

P value 0.000
Endometritis and duration of labour

For duration of labour 7-9 hours

P value 0.666
Endometritis and duration of labour

For duration of labour >9 hours

- **GROUP A:** 45 (97.8%) NO, 1 (2.2%) YES
- **GROUP B:** 27 (62.8%) NO, 16 (37.2%) YES

P value 0.000
Endometritis with PROM

GROUP A
- 67 (95.1%)
- 3 (4.9%)

GROUP B
- 25 (80.6%)
- 6 (19.4%)

P value 0.014

For patients with PROM
Endometritis without PROM

For patients without PROM

GROUP A

GROUP B

P value 0.002
Wound Infection and Duration Of Labour

- Group A: 3 (1.8%) with wound infection, 165 (98.2%) without
- Group B: 7 (4%) with wound infection, 160 (96%) without

P value 0.209

P value 0.298
Wound infection and PROM

For patients with PROM

P = value 0.004
# Summary Of Results

<table>
<thead>
<tr>
<th>Post op morbidity</th>
<th>Group A N=217 N(%)</th>
<th>Group B N=217 N(%)</th>
<th>P VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fever</td>
<td>9(4.1%)</td>
<td>16(7.4%)</td>
<td>0.149</td>
</tr>
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Discussion

- Vaginal cleansing with different antiseptic solutions before vaginal and abdominal hysterectomy was reported in 1970.
- It has resulted in reduction of post operative infectious morbidity.
- Povidone iodine has been used for this purpose in various studies with varying results.
- Use of other antiseptic solutions for preoperative vaginal cleansing has also been reported.
Discussion

- Despite Prophylactic parenteral antibiotics which reduce the rate of post operative infections, infectious morbidity after a caesarean delivery remains significant.

- Osborne and Wright reported a reduction of 98% in the total number of vaginal bacteria with the preoperative vaginal cleansing with Povidone iodine.

- Rose et al used chlorhexidine for vaginal scrub, whereas Pitt et al tried intravaginal metronidazole which showed significant reduction in post caesarean endometritis.
Discussion

- In our study, vaginal cleansing has shown a statistically significant reduction in post operative composite infectious morbidity after LSCS.

- This reduction appears more marked for women undergoing cesarean section with active labour.

- Our findings are similar to those of Guzman et al who reported a reduced rate of post cesarean infections.

- Studies done by David et al and Reid et al, however did not show a statistically significant difference in post cesarean infectious morbidity.
Discussion

- Various risk factors recognized for developing post caesarean endometritis include cervical dilatation at the time of caesarean section, prolonged labor, prolonged rupture of membranes and maternal anemia.

- The association of active labor and longer duration of rupture of membranes as risk factors has also been consistent in our study.

- Our study showed a statistically significant reduction in the incidence of post caesarean endometritis as reported in a study by Rosally et al.
Discussion

- In the present study, wound infection reduction was seen although statistically non-significant.

- Regarding febrile morbidity, our findings are consistent with the previous studies (Reid et al, Guzman, Haas et al) which demonstrate no significant difference in the rate of post-operative fever with preoperative vaginal cleansing.

- The cleansing solution was well tolerated by the patients with no increase in allergic reactions or skin irritation.
Discussion

- Within our study population, this intervention demonstrates a statistically significant reduction in rate of post caesarean infectious morbidity.

- The incidence of post caesarean endometritis was significantly reduced particularly in patients who were in active labour and with ruptured membranes.
CONCLUSION

- Antiseptic vaginal cleaning before cesarean section decreases the frequency of postpartum infectious morbidity particularly endometritis.
- Vaginal cleansing, a safe, cheap and well tolerated intervention, can be an adjunct to prophylactic antibiotics immediately before caesarean section.
References


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