

Decision for choice of delivery modes in HIV infected females

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Abstract

Background: Recently, the prevalence of HIV is increasing in females during pregnancy and otherwise. This HIV infection also spreads to the neonatal and infants either through breastfeeding or during birth. **Aims:** The present trial was undertaken to determine the efficacy of elective caesarean section in the prevention of mother to foetus transmission of HIV infection, and to determine the perception, attitude, and knowledge of HIV infected pregnant females towards ECS as a mean of infection prevention. Also, the study assessed the comparison of planned and actual deliveries in HIV infected females. **Materials and Methods:** 26 subjects were asked to fill the questionnaire which had the demographic data of the subjects including socio-economic status, obstetric and gynaecologic history, associated medical history, questions related to present pregnancy, delivery mode and its decision, and knowledge and attitude of the participants towards Elective Caesarean Section. The collected data were subjected to statistical evaluation and the results were formulated. **Results:** The majority of females said the delayed recovery remained the most common reason for preferring the vaginal deliveries over the caesarean section in 65.38% of subjects (n=17). The second most common reason was delayed postoperative complications after discharge including infection and death in 53.84% (n=14) subjects followed by a higher death rate in caesarean as opted by 50% (n=13) study subjects. The other factors were a pain in 34.61% (n=9), more cost of the caesarean section in 15.38% (n=4), and 11.53% (n=3) subjects believed that after caesarean section fertility is reduced. In females who were aware of HIV status before delivery, only 15% opted for ECS, whereas, in females who were detected for HIV during pregnancy, 67% (n=4) agreed for elective caesarean section. **Conclusion:** The study concludes that although females had a fear of surgical caesarean section related to the pain, cost, delayed complications, and even death, however, there is increased acceptability towards elective caesarean section post-counselling in HIV positive pregnant females.

Keywords: Elective caesarean section, HIV, Pregnancy, perinatal transmission, vaginal delivery.

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Introduction

Lately, the prevalence of HIV is increasing in females during pregnancy and otherwise. This HIV infection also spreads to the neonatal and infants either through breastfeeding or during birth. In a different study in literature, there is a high increase in the incidence of HIV in pregnant females and hence children. Usually, the children are infected by their mothers during either breastfeeding, delivery, or fetal life[1]. Previous literature has reported approximately 12% prevalence of HIV in pregnant females which imposes a high threat of transmitting the virus from mother to child[2]. The major effort in such a case for a health-care provider is to impart ways and programs to stop such transmission by ensuring safe delivery and infant care. These also include incorporating counselling regarding safe childbirth and infant care to pregnant females, timely testing of viral load, timely HIV testing to the mother and infant, prophylactic HIV therapy, safe childbirth measures, and education regarding safe breast-feeding[3]. All these practices should be within reach of both rural and urban populations at an affordable cost. With the intensive efforts by the health-care providers, this remains a great challenge, and the cases are rapidly increasing of HIV infected infants[4].

Caesarean section performed for delivery/ child-birth before the ruptures of membranes needed for childbirth or before starting labour is known as ECS (Elective Caesarean section). This elective Caesarean section plays an important role in the prevention of HIV from mother to foetus during childbirth, if employed as a delivery mode in HIV infected pregnant females[5]. It has been shown that, when caesarean deliveries are performed in HIV infected females, the risk of mother to foetus transmission of HIV is markedly reduced. This has also been noticed in females where either only Zidovudine was given as a prophylactic measure or no antiretroviral therapy was given[6]. In females infected with HIV with a viral load of more than 1000/mm and of 38 weeks gestation, ACOG (American College of Gynaecologists) recommends ECS as the choice of delivery mode as this mode has higher effectiveness in the prevention of perinatal viral transmission. However, the effectiveness of ECS is controversial in lower viral loads, whereas, another literature suggests an equally effective role of ECS even in lower viral loads[7]. Although ECS is proved to be a highly effective modality for delivery in HIV-infected females, its implication in the rural areas is limited owing to the non-availability of the skilled professional, related complications, and higher cost of the caesarean section. Also, other factors that are responsible for limiting the ECS in pregnant females especially in the rural population are knowledge, perception, and attitude of the females towards the elective caesarean section[8]. Hence, the present trial was undertaken to determine the efficacy of elective caesarean section in the prevention of mother to foetus transmission of HIV

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infection, and to determine the perception, attitude, and knowledge of HIV infected pregnant females towards ECS as a mean of infection prevention. Also, the study assessed the comparison of planned and actual deliveries in HIV infected females.

Material and methods

The present cross-sectional trial was undertaken to determine the efficacy of elective caesarean section in the prevention of mother to foetus transmission of HIV infection, and to determine the perception, attitude, and knowledge of HIV infected pregnant females towards ECS as a mean of infection prevention. Also, the study assessed the comparison of planned and actual deliveries in HIV infected females. The trial included 26 females who were HIV positive during their pregnancy. The females were within the age group of 19 years to 32 years with a mean age of 24.3 years. The informed consent was taken from all the study participants, and ethical clearance was taken from the Ethical committee of the institute. The study pattern was based on a structured questionnaire. The study was carried out at an institution where approximately 35-45 females give birth daily. The institute is a public hospital where the majority of delivering females belongs to the low socio-economic group. This institute is also the place where all the complicated cases who cannot afford private practice are being referred by the treating health-care provider. The infant post-birth were kept in neonatal wards to avoid the bias of recall and missing records. All the subjects included were found to be HIV positive antenatal. The study included pregnant females of a minimum age of 18 years or more, females tested positive for HIV antenatal, subjects who were mentally and physically fit to give the consent for participation, able to complete the structured questionnaire, and females with no prenatal anomaly in the foetus, and females with no associated comorbidity that could lead to foetal/infant loss. Any females with associated comorbidity, foetal anomaly, not in mental/physical state to complete the questionnaire or females who voluntarily did not want to be the part of the trial were excluded from the study. After applying the inclusion and exclusion criteria, a total of 26 females made the final study sample. The identity of the subjects was kept anonymous. Before obtaining the consent, the study design was elaborately explained to each participant including aims, methodology, and risks associated. After including the subjects were asked to fill the questionnaire which was given to subjects in both Hindi and English. The subjects who delivered surgically were asked to fill questionnaire after 24 hours of delivery, whereas, subjects who had vaginal delivery filled the questionnaire after 6-12 hours of delivery. The questionnaire had the demographic data of the subjects including socio-economic status, obstetric and gynaecologic history, associated medical history, questions related to present pregnancy, delivery mode, and its decision, and knowledge and attitude of the participants towards Elective Caesarean Section. All the potential risks, benefits, and complications of the Elective caesarean section were explained to the subjects including death. The collected data were subjected to statistical evaluation and the results were formulated.

Results

The present cross-sectional trial was undertaken to determine the efficacy of elective caesarean section in the prevention of mother to foetus transmission of HIV infection, and to determine the perception, attitude, and knowledge of HIV infected pregnant

females towards ECS as a mean of infection prevention. Also, the study assessed the comparison of planned and actual deliveries in HIV infected females. The trial included 26 females who were HIV positive during their pregnancy. The females were within the age group of 19 years to 32 years with a mean age of 24.3 years. The study originally started with 30 females where 2 women refused to participate in the study and the other two were not available for follow-up as they took discharge against medical advice. The demographic characteristics of the study subjects are listed in Table 1. It was seen that 46.15% (n=12) subjects had education of either primary level or more, post-graduate level education was received only by 1 subject (3.84%). 23 females were married (88.46%), 7.69% females were single mothers (n=2), 1 female was widowed. The majority of subjects were from a low socio-economic background with 80.76% falling in this category (n=20). Only 2 females (7.69%) were from the high socioeconomic group. In 20 subjects (76.92%) HIV was detected during the pregnancy. A total of 79 births were previously given by 26 study subjects. 65.38% (n=17) percent of subjects had previous surgical exposure. The anti-retroviral therapy was taken by 84.61% (n=22) subjects while 4 subjects did not receive the therapy. Live birth was given by 23 females (88.46%) subjects, whereas, 11.53% (n=3) were stillbirths/neonatal deaths. The average birth weight was 2.9±1.24. The questionnaire in the present study also assessed the reason or fears of the subjects for not choosing the caesarean section and preferring the vaginal deliveries over the caesarean sections (Table 2). The majority of the females said they delayed recovery remained the most common reason for preferring the vaginal deliveries over the caesarean section in 65.38% of subjects (n=17). The second most common reason was delayed postoperative complications after discharge including infection and death in 53.84% (n=14) subjects followed by a higher death rate in caesarean as opted by 50% (n=13) study subjects. The other factors were a pain in 34.61% (n=9), more cost of the caesarean section in 15.38% (n=4), and 11.53% (n=3) subjects believed that after caesarean section fertility is reduced. The questionnaire also evaluated the change in response and acceptability towards Elective Caesarean Section after counselling about the benefits of ECS in HIV positive pregnant females. The results are summarized in Table 3. It was seen that in subjects with the education level of primary schooling or lesser 33.5% (n=2) subjects agreed for elective caesarean section for delivery, whereas, in subjects with the education of high school and graduation level 34% (n=3) and 25% (n=1) subjects respectively agreed for ECS. The female with post-graduation education also agreed on ECS as the delivery mode. 50% (n=1) single females agreed on ECS post-counselling. For married females, 43.47% (n=10) females agreed to opt for ECS as the mode of delivery. 19.04% (n=4), 33.3% (n=1), and 50% (n=1) females from low, average, and high socio-economic group respectively agreed for caesarean section electively as the delivery mode. In females who were aware of HIV status before delivery, only 15% agreed for ECS, whereas, in females who were detected for HIV during pregnancy, 67% (n=4) agreed for elective caesarean section. In subjects with a previous history of the surgery, 76.47% of subjects agreed to ECS. Also, in subjects who received anti-retroviral therapy 68.18% (n=15) agreed to ECS, and in subjects who did not take antiretroviral therapy, 50% agreed for elective caesarean section.

Table 1: Demographic Characteristics of the study subjects

S.No	Parameter	Percentage	Number
1	Mean age	24.3 years	
2	Age Range	19-32 years	
3	Education		
a	Primary/lesser	46.15%	12
b	High school	34.61%	9

c	Graduation		15.38%	4
d	Post-graduation/more		3.84%	1
4	Marital Status			
a	Single		7.69%	2
b	Married		88.46%	23
c	Widowed/Sepearted		3.84%	1
5	Socioeconomic status			
a	Low		80.76%	21
b	Average		11.53%	3
c	High		7.69%	2
6	Time of HIV detection			
a	Before Pregnancy		76.92%	20
b	During Pregnancy		23.07%	6
7	Maternal History (Births)			
8	Previous Surgical History			
9	Anti-Retroviral Therapy received			
a	Received		84.61%	22
b	Not-received		15.38%	4
1	Fetal Outcomes			
a	Live Births		88.46%	23
b	Still births		11.53%	3
1	Birth weight (Average)	2.9±1.24		

Table 2: Fears associated with Caesarean sections in the study subjects

S.No	Reason for not preferring caesarean	Percentage	Number
1.	Delayed post-operative complications	53.84%	14
2.	Pain	34.61%	9
3.	Delayed recovery	65.38%	17
4.	Cost of the procedure	15.38%	4
5.	More death rate	50%	13
6.	Effect on fertility	11.53%	3
7.	Others	7.69%	2

Table 3: Acceptability towards caesarean section after counselling in the study subjects

S.No	Parameter	Percentage	Number
1	Education		
A	Primary/lesser	33.5%	2
B	High school	34%	3
C	Graduation	25%	1
D	Post-graduation/more	100%	1
2	Marital Status		
A	Single	50%	1
B	Married	43.47%	10
C	Widowed/Sepearted	-	
3	Socioeconomic status		
A	Low	19.04%	4
B	Average	33.3%	1
C	High	50%	1
4	Time of HIV detection		
A	Before Pregnancy	15%	3
B	During Pregnancy	67%	4
5	Previous Surgical History		
6	Anti-Retroviral Therapy received		
A	Received	68.18%	15
B	Not-received	50%	2

Discussion

The present cross-sectional trial was undertaken to determine the efficacy of elective caesarean section in the prevention of mother to foetus transmission of HIV infection, and to determine the perception, attitude, and knowledge of HIV infected pregnant females towards ECS as a mean of infection prevention. Also, the study assessed the comparison of planned and actual deliveries in HIV infected females. The study shows that females were aware of the complications of the surgical deliveries, however, post-counselling if the cost of the surgical procedures is barred, the majority of females accepted elective caesarean as a preferred mode of delivery. These findings were in agreement with the studies of Beakers P et al[9] in 2003 and Ong'ech, JO et al[10] in 2006 where authors reported high post-counselling acceptability for elective caesarean section. The results showed that concerning demographic characteristics, 46.15% (n=12) subjects had the education of either primary level or more, post-graduate level education was received only by 1 subject (3.84%). 23 females were married (88.46%), 7.69% females were single mothers (n=2), 1 female was widowed. The majority of subjects were from a low socio-economic background with 80.76% falling in this category (n=20). Only 2 females (7.69%) were from the high socioeconomic group. In 20 subjects (76.92%) HIV was detected during the pregnancy. A total of 79 births were previously given by 26 study subjects. 65.38% (n=17) percent of subjects had previous surgical exposure. The anti-retroviral therapy was taken by 84.61% (n=22) subjects while 4 subjects did not receive the therapy. Live birth was given by 23 females (88.46%) subjects, whereas, 11.53% (n=3) were stillbirths/neonatal deaths. The average birth weight was 2.9±1.24. These findings were consistent with the studies by Read JS and Newell EM[11] in 2005 and Chigbu CO and Iloabachie GC[12] in 2007 where similar demographics were taken for study subjects. The questionnaire in the present study also assessed the reason or fears of the subjects for not choosing the caesarean section and preferring the vaginal deliveries over the caesarean sections. The majority of the females said they delayed recovery remained the most common reason for preferring the vaginal deliveries over the caesarean section in 65.38% of subjects (n=17). The second most common reason was delayed postoperative complications after discharge including infection and death in 53.84% (n=14) subjects followed by a higher death rate in caesarean as opted by 50% (n=13) study subjects. The other factors were a pain in 34.61% (n=9), more cost of the caesarean section in 15.38% (n=4), and 11.53% (n=3) subjects believed that after caesarean section fertility is reduced. Similar findings were reported by Kiarie JN et al[13] in 2006 and Awoyinka BS et al[14] in 2006 where authors reported death and other post-operative complications as the main reason for denial of caesarean delivery. The study also shows that in subjects with the education level of primary schooling or lesser 33.5% (n=2) subjects agreed for elective caesarean section for delivery, whereas, in subjects with the education of high school and graduation level 34% (n=3) and 25% (n=1) subjects respectively agreed for ECS. The female with post-graduation education also agreed on ECS as the delivery mode. 50% (n=1) single females agreed on ECS post-counselling. For married females, 43.47% (n=10) females agreed to opt for ECS as a mode of delivery. 19.04% (n=4), 33.3% (n=1), and 50% (n=1) females from low, average, and high socio-economic group respectively agreed for caesarean section electively as the delivery mode. In females who were aware of HIV status before delivery, only 15% agreed for ECS, whereas, in females who were detected for HIV during pregnancy, 67% (n=4) agreed for elective caesarean section. In subjects with a previous history of the surgery, 76.47% of subjects agreed to ECS. Also, in subjects who received anti-retroviral therapy 68.18% (n=15) agreed to ECS, and in subjects who did not take antiretroviral therapy, 50% agreed for elective caesarean section. These results were in agreement with the reports by Bjorklund K et al[15] in 2005 and Chigbu CO et al[12] in

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2007 where authors suggested post-counselling acceptability of caesarean section electively.

Conclusion

The study concludes that although females had a fear of surgical caesarean section related to the pain, cost, delayed complications, and even death, however, there is increased acceptability towards elective caesarean section post-counselling in HIV positive pregnant females. Hence, the study suggests more focus on antenatal counselling as a measure to prevent perinatal mother to foetus transmission of HIV. The study had few limitations including small sample size, shorter monitoring period, and geographical area bias. To reach a definitive conclusion, studies with more subjects and a longer monitoring period are required.

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