Abstract

Background:

always cesarean. However, predicting success of VBAC following Trial of Scar (TOS) is still a difficult task due to the lack of a validated prediction tool. In addition to this, feto-maternal outcome was   w   Æ   g   oitio   Mt p

of association) with 95% CI was used to see the associations. A P<0.05 was considered as statistically significant in all types of tests to declare significance.

Results :

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Background

Caesarean deliver is an operation done to deliver a bab through proce dure worl dwi de. Cesarean section is one of life saving proce dures an d intervention attribute d to decrement of the maternal mortalit an d morbi dit rates [1].

that, in the absence of a contraindication, a woman with one previous low transverse cesarean deliver be counseled attempt labor in a subsequent pregnanc [1]. These attempts were highl successful rates of Vaginal Birth After previous Cesarean (VBAC) increased from 3.4% to 28.3%, along with a concomitant decline in total cesarean deliver rates for the United States [2].

Vaginal Birth After Cesarean section (VBAC) is associated with shorter maternal hospitali ations, less blood loss and fewer transfusions, fewer infections and fewer thromboembolic events than cesarean deliver. Several reports have indicated that the absolute risk of uterine rupture attributable to a trial of labor is about 1 per 1000 [14]. A 60% to 80% success rate of vaginal birth after previous caesarean section has been reported b man authors if the primar caesarean was done for nonrecurring indications [1]. Some of the non recurring indications for caesarean section are: poor labor progress, fetal distress, placenta previa, transverse lie, breech presentation, oblique lie, pregnanc induced h pertension and twins [1,3,4 6].

British gures indicate that among women with a prior caesarean section, 33% will successfull achieve vaginal birth in the subsequent pregnanc. Again there was considerable variation across institutions ranging from 6% to 64% [7]. One stud in Lahore reported successful vaginal deliver in 70% of the patients and repeat emergenc caesarean section in 30% of the patients. The leading indications for the repeat caesarean sections were: failure to progress, fetal distress and scar tenderness. There were no maternal and fetal complications occurred. The concluded that VBAC is a safe practice [8].

Both, attempting a vaginal birth and opting for an Elective Repeat Cesarean Section (ERCS) are associated with different risks for the mother and newborn and selecting a deliver plan involves a difficult weighing of those cases. For ears, researchers have maintained an interest in the effective prediction or identification of factors, which can in uence the outcome of a TOS. The abilit to predict the outcome of an attempted trial of vaginal deliver pla s an important role in initial counseling of pregnant women with previous one cesarean deliver [ ].

Studies on predictors of success are few and most of them conducted in developed countries and difficult to generali e for resouce limited setting. There is no stud that assessed feto maternal outcome and factors associated among mothers with previous one caesarean scar at Attat Catholic Primar ospital. ence, the objective of this stud was to determine the feto maternal outcome of pregnanc among women with previous cesarean section who gave birth at Attat Catholic ospital and associated factors. More speci call, to assess the common mode of deliver among mothers with the pervious one cesarean scar, to determine the outcome of VBAC and associated factors.

Materials and Methods

Study setting and design

The stud was conducted at Aattat Primar ospital Gurage Zone, SNNPR, Ethiopia, which is 175 km awa from Addis Ababa and 410 km from regional cit, awasa.

The hospital was established in 1 61 E.C b Catholic Missionar and still now administered b them. The catchment population is 800,000, of which 51.2% females and 48.8% males. The Zone has 40 ealth Centers and 2 newl established hospital which are government owned and all referred to this ospital. It is one of a liated hospital training IEOS students in conjunction with SNNP. It has 100 beds with deliver room, which give services for parturient mothers and

other patients. The hospital has multidisciplinar sta s (G necologist, General Surgeon, emergenc surger students, pharmacist, Lab. Technologist, midwives and clinical nurses). rough all the da s of week the services are provided free of charge for all laboring mother.

ospital based cross sectional retrospective stud design was used from October 01/2015 Septmeber 30/2016. All mothers with pervious one cesarean scar who gave birth in Attat Catholic hospital were source population and all mothers with one pervious cesarean scar who gave birth in Attat Catholic ospital within the stud period were stud population. omen with one previous lower segment cesarean section, singleton pregnanc, cephalic presentation and term gestation were included in the stud. owever, ose women with two or more cesarean sections, previous uterine surger like m omectom and classical section were e cluded.

Sample size

All mothers with one pervious cesarean scar who gave birth within the speci ed period in St. Luke Catholic Primar ospital were included which is 16.

Study variables

Dependent variable is success of VBAC and independent variables were age, residence, gravidit, parit, LMP, ANC follow up, GA, duration of labor, F B, cervical dilatation, station, pre operation CT, pervious indication for cesarean section, time of passage of li quor and histor of vaginal birth after cesarean.

Method of data collection

Data were collected using structured, standard data e traction format/checklist to collect patient information from deliver registration books, operation registration books and individual charts.

The check list was prepared in English and information abstracted from medical record books. Eight data collectors were participate in the data collection process after training them for one da. Before the actual data collection, the checklist was pre tested on 5% of the total sample si e. Da to da supervision was carried out during the whole period of data collection b the supervisor. At the end of each da, the questionnaire was review and cross checked for completeness, accurac and consistenc b the investigator and corrective discussion were under taken with collectors.

Data processing and analysis

The collected data was being checked for its completeness, entered using Epi data version 3.1 and e ported to S PSS 20 for anal sis. Fre quenc distributions of both dependent and independent variables were worked out and the association between independent and dependent variables was measured and tested using chi s quare and AOR. To identif candidate predictors of VBAC, bivariate anal sis was done. AOR was used at 5 % con dence interval and 5% level of precision to check level of signi cance.

Operational definitions

Gestational age is calculated from the LNMP or fundal height that was documented on the card, if not from the duration of amenorrhea documented from mothers recall and is rounded to the nearest weeks. Amenorrhea of months was taken as 37 42 weeks gestation for all mothers.

Cesarean section means deliver of the fetus, membrane and placenta after 28 weeks of gestation b opening of abdomen and uterus.

Citation:

Elective cesarean section operation that done at a pre selected time before onset of labour, usuall at complete 3 week.

Elective Repeat cesarean section cesarean section done at a pre selected time before onset of labour in presence of previous cesarean section.

Successful VBAC A vaginal deliver (spontaneous or assisted) in a woman had previous one cesarean section.

Parit number of births (both life birth & stillbirth) of at least 28 weeks of gestational age.

TOL trial of labor after cesarean section to achieve VBAC.

Station degree of engagement of the presenting part, measured as distance in centimeters or between the fetus (s)]T0(t) 5 (im)tf nme f0b0 (a) (r)13 (e) 6 (a)8. 0 (a) si1 7 (f g)18p0 0 sc35 T[(P)22 (a) (r) 6 n.

Maternal and neonatal outcome

There was no maternal death during the study period, laparotomy were done for three scar dehiscence (2%) and 6 (3.6%) of mother had hemoglobin <7 and transfused blood. Majority of neonate with birth weights between 2500 4000 gm 161 (5%), 127 (75.1%) of neonate with first minute A_PGAR score of >=7 and 3 (1.8%) fetal death occurred (Table 4).

Factors associated with success of VBAC

The association between independent variables and success of VBAC was checked by binary logistic regression model to identify candidate variables (p<0.25). During bivariate analysis, parity, (COR 13.12, 5% CI: 4. , 34. 75), passage of liquor at admission (COR 0.230, 5% CI: 0.116, 0.457), the indication for pervious cesarean section (OR 0.53, 5% CI: 0.14, 0.1), cervical dilation at admission (COR 3.6, 5% CI: 1.877, 6. 03) and history of vaginal birth after cesarean section (COR 0.46, 5% CI: 0.020, 0.103) were candidate variables identified for the final model.

In multivariate logistic regression after it was adjusted for the variables in the model, women who had passage of liquor at admission (AOR: 0.25, 5% CI: 0.084, 0.733), history of vaginal birth after cesarean (AOR: 1.88, 5% CI: 0.084, 0.733), cervical dilation at admission (AOR: 8.171, 5% CI: 3.303, 34.473) and type of indication for pervious

cesarean section (AOR: 0.703, 5% CI: 0.014, 0.364) were significant factors associated with success of VBAC.

Three fourth (75%) of mothers who had passage of liquor at admission were less likely to have successful VBAC when compared to no history of passage of liquor at admission. Those mothers who had history of vaginal birth after cesarean section were almost 2 times more likely to have successful VBAC than counterparts. Those mothers who had dilated cervix at admission (>=4 cm) were 8 times more likely to have successful VBAC than counter parts. One third (30%) of mothers with PRF R as an indication for pervious cesarean section were less likely to have successful VBAC than those mothers with unknown indication (Table 5).

Discussions

Previous caesarean section was said to constitute the highest single indication for repeated caesarean section because obstetricians still regard vaginal birth after previous caesarean section as a high risk option. This study revealed that common mode of delivery was repeated caesarean section 104 (61.5%) and CPD was the major indication for repeated caesarean section that may be due to unappropriate diagnoses of CPD. This study was conducted with the main objective of identifying factors associated with successful vaginal delivery on mothers of ered trial of labor after previous one lower segment caesarean section. Significant factors were passage of liquor at admission, history of vaginal birth after cesarean, cervical dilation at admission and type of indication for pervious cesarean section were significant factors associated with success of VBAC.

The VBAC success rate vary from place to place 45.5% (in our study) was approximately similar with reported from three teaching hospitals such as Addis Ababa, Begum, Nigeria 4 %, 43.2% and 50% respectively [5, ,10]. But our finding is lower than the rate of VBAC in Tanzania which was 55%, 6 % in avana Nigeria teaching hospital, 62.3% in India and 72.1% in Kuwaite and higher than the reported from RSA 2 % [3,4,11 13]. This discrepancy may be due to the variety type of indication diagnosed and applied for the previous cesarean section. Most probably if true CPD is an indication for the previous cesarean section, VBAC will fail. Other indications may not appear during trial of VBAC that is why the success rate is near to half. Our study revealed that successful VBAC was observed in 65 (45.5%) which was relatively lower than the standard accounts 60 80%.

In this study, the strongest predictor determining success of VBAC was cervical dilatation at admission. Those who were admitted with cervical diameter greater >=4 cm (Active first stage of labour) had a strong likelihood of vaginal delivery than those admitted at cervical diameter of <4 cm (latent first stage of labour). This is due to high frequency of false labour and slow progress in the latter which is the same finding with another study done in Addis Ababa, Malaysia, Kuwait [4,8,10]. Many authors reported previous vaginal birth was the single best predictor for successful VBAC [1,3,8 10].

Those mothers with fetal distress were indicated for pervious cesarean section has been found associated with high success of VBAC than unknown indication. CPD and failer of progress of labor were the main cause of failure which was the same result with Havana Specialist Hospital, Lagos, teaching hospitals in India [14,15]. Passage of liquor at admission was good prognostic factor which was having same finding with research done in Addis Ababa and other study Kuwait [4,]. In our case parity is not a significant factor at the final model. However, multiparity were associated with high success rate of VBAC in another study. This discrepancy might be happened due to the sample size smaller in our case and other studies emphasized that increases in the number of vaginal deliveries increases the chances of having a successful VBAC, the same finding with Abu Dhabi and opposite to study in Addis Ababa [8,].

In this study, maternal age, gestational age, duration of labor after admission, station at the time of admission and birth weight were not found significant determinants. However, Birth weight was one of the major predictor in another study [4,8]. Gestational age was not found as significant predictor of success of VBAC in our study. There are reports which found that gestational age above >=40 weeks is associated with poor success [4,8]. In our case, the finding could also be confounded by high number of unknown dates and ascertainment of correct date was not possible.

Perinatal and maternal outcome of labor were recorded among women who had trial of VBAC in this study were 3 scar dehiscence similar with research done in Tanzania 2%, India 2% and 3 perinatal death and no maternal death occurred which is similar finding with

Malaysia 2 deaths [,12,16]. Infection 5 (4.8%), PPH 4 (3.8%) were the major intra and post operation short term complication observed. However, when we compare these complications, it was higher than occurred during vaginal birth (VBAC). There is no difference in the first and 5th min A$_P$GAR score.

The possible limitations of this study were the clinical part of data abstracted from the secondary data or patient's chart. This finding may be biased by the physician's knowledge and skill who followed and did the procedures as well as documenting reliable information on the chart. In addition, we might miss other important variables due to incompleteness and unavailability of formats in the chart. The design is not strong enough to show cause and effect relationship rather it reveals with temporary factors which affect the outcome observed at a time. This finding may not be generalized to the target population because of non probablity sampling technique used at a single facility.

Conclusion

Out of 169 mothers with previous one cesarean scar, 104 (61.5%) of them were undergone Trial of Labor (TOL). Of this, successful VBAC was observed in 65 (45.5%) which was relatively lower than the standard 60 80%. Passage of liquor at admission, history of vaginal birth after cesarean section, cervical dilation at admission >4 cm and indication (VRFR) for pervious cesarean section were significant factors associated with success of VBAC.

Citation:

Consent to Publish

Availability of Data and Materials

All authors declare that they have no financial and non-financial competing interests. None of the authors of this paper has a financial or personal relationship with other people or organizations that could inappropriately influence or bias the content of the paper. It is to specifically state that "No Competing interests are at stake and there is No Conflict of Interest" with other people or organizations that could inappropriately influence or bias the content of the paper.

Authors Contributions

and Mahlet Tesfaye worked a lot in acquisition of data and reviewed the manuscript for the intellectual content. All authors read and approved the final manuscript.

References