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ORIGINAL ARTICLE

Comparative study of Arabin Cerclage Pessary and McDonald stitch regarding fetal outcome in Preterm Labour.

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ABSTRACT… Objective: To assess fetal outcomes in the form of mean birth weight and admission of infants to neonatal intensive care unit against women with threatened preterm labour treated with Arabin cervical pessary and McDonald cervical stitch. **Study Design:** Randomized Controlled study. **Setting:** Department of Gynecology, Aziz Fatimah Hospital, Faisalabad. **Period:** Dec 2025 to May 2026. **Methods:** One hundred and eighty two (182) pregnant women aged between 18 and 35 years and with singleton pregnancy with cervical length less than 25mm on transvaginal ultrasound, were the participants. Patients with a cervical dilatation of 4 cm and above, cervicofetal or fetal conditions, proven premature labour, torn membranes, liquor drainage, or infection were ruled out. The sample was divide into two groups (1:1 ratio). Group A consisted of 91 patients who were treated with the use of Arabin cervical pessary and Group B consisted of 91 patients treated with the use of McDonald cervical stitch. The patients were also followed up to delivery. The birth weight and admission of the child to the NICU (12 hours of birth) were captured. The SPSS version 25 was used to analyze the data. **Results:** Group A had a mean age of 27.42 + 4.36 years, whereas Group B had a mean age of 27.91 + 4.21years high and significant difference was found in the mean birth weight between the two groups, 2.74 ± 0.89kg in Group A and 2.31 ± 0.81kg in Group B with p=0.001. Group A had much lower rates of admission to NICU compared to Group B, 28 (30.8%) and 48 (52.7), respectively, with a p=0.003. **Conclusion:** Arabin cervical pessary has significant difference regarding mean birth weight or NICU admission relative to McDonald stitch in pregnant women with threatened preterm labour.

Key words: Arabin Pessary, Birth Weight, Cervical Length, McDonald Stitch, NICU Admission, Preterm Labour.

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INTRODUCTION

Preterm birth, or delivery before 37 weeks total gestation, is one of the top causes of neonatal mortality and childhood morbidity in the world. Nevertheless, irrespective of various innovations in the areas of antenatal monitoring and neonatal intensive care, preterm births are still a problematic issue, especially in low- and middle-income countries where timely pregnancy care and access to high-tech neonatal services may be inaccessible.[1,2] Premature birth is a major cause of neonatal mortality, low birth weight, respiratory distress syndrome, sepsis, intraventricular bleeding, feeding problems, extended hospital stay, and subsequent impaired neurodevelopment among other things worldwide.[1,2] Thus, methodologies capable of extending pregnancy in a safe way and alleviate fetal prognosis are of great clinical significance.

Insufficient cervical rigidity and sonography cervical shortening are crucial and potentially changeable risk factors of spontaneous preterm birth. The cervical length assessment by means of transvaginal ultrasound is very convenient in risk stratification because short cervix during the second trimester is considered to be the predictor of preterm birth.[3,4] A cervical length that is below 25 mm is often regarded to create a clinical significance particularly in women who have previously given birth to preterms or showing symptoms of threatened preterm labour. Cervical shortening can be identified early and thus women who might be subject to preventive measures against pregnancy complications like vaginal progesterone, cervical cerclage, or cervical pessary can be selected.[5]

One of the most used surgeries is now the McDonald cervical cerclage where a non-absorbable suture is fixed all the way around the cervix to offer some mechanical reinforcement and prevent premature

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cervical dilatation. Its use is common due to its technical simplicity, comparatively fast to execute, and being conversant to obstetricians.6 The use of cerclage however is an invasive technique and is potentially linked with exposure to anesthesia, hemorrhage, infection, tear of membranes, cervical injury, and the discomfort of the procedure.[6,7]

The Arabin cervical pessary is a surgery-free silicone pessary that is fitted around the cervix. It is assumed to change the uterocervical angle, to decrease direct pressure on the internal cervical os, and to provide mechanical support to the cervix.[8] It can easily be removed, is relatively cheap, and does not involve anesthesia, and thus has interested people as an alternative to cerclage. Nevertheless, there is conflicting evidence, and recent studies particularly assert that the outcomes can be different based on the population properties, singleton or twin conception, cervical length, the obstetrical history, the application of perioperative progesterone.[5,8,9]

The comparative evidence regarding Arabin pessary and McDonald cerclage remains sparse, particularly in terms of a clinically significant outcome of fetal results like birth weight and the neonatal intensive care unit admission.[10] Thus, a rather straightforward comparison between these two interventions in threatened preterm labour and short cervix women might facilitate the local clinical practice and enhance perinatal decision-making.

METHODS

The present research was randomized controlled trial and carried out in the Department of Gynecology, Aziz Fatimah Hospital, Faisalabad upon receiving the consent of the Institutional Ethical Review Committee (Ref. No. IEC/344-24, dated: 15-10-2024). The duration of the study was six months from Dec 2025 to May 2026. The enrolment criteria were that all pregnant women who reported to the department with risk of pregnancy preterm delivery and met the eligibility criteria would be evaluated regarding inclusion in the study. Each participant signed an informed consent (written) following an explanation of the aim of the study, description of the procedures, benefits, risks, and the ability to discontinue the study at any point in time without impacting on her treatment. Data collected in the study had its confidentiality ensured.

The number of patients was 182 (91 in each group). It was estimated applying OpenEpi sample size calculator with taking a significance level of 5 percent, power of study 80 percent and the expected mean birth weight in the Arabin pessary group was 2.76 /1.297 kg and the anticipated mean birth weight in the McDonald stitch group was 2.28 /0.988 kg. The sampling procedure employed was a non-probability consecutive type of sampling wherein qualified patients were recruited up to the desired level of sample. The study involved patients between the ages of 18 and 35 years, who were pregnant with the singleton and with the cervical length lower than 25 mm on transvaginal ultrasound that indicated posing a threat of preterm birth. The patients that had a cervical dilatation of 4 cm, or more, or congenital cervical anomaly, fetal congenital anomaly, known premature labour, ruptured membranes, liquor drainage, or clinical signs of infection were not included in the study.

After enrolment, detailed demographic and obstetric information was recorded on a pre-designed proforma. They were name, age, address, contact number, gestational age, height, weight, body mass index, parity, number of previous abortions, type of labour and mode of delivery. Transvaginal ultrasound was also done to ensure that the patient has a cervical length that was less than 25 mm and only patients who had less than that were considered eligible. The baseline clinical assessment was done to exclude the presence of labour, ruptured membranes, active bleeding and infection. Lottery was then performed to randomly assign all of the eligible participants to two equal groups. Group A consisted of patients who were treated using Arabin cervical pessary and Group B consisted of patients treated using McDonald cervical stitch.

Group A: An Arabin silicone cervical pessary was placed around the cervix upon diagnosed threatened preterm labour. A consultant gynecologist put the pessary under aseptic conditions after appropriate clinical evaluation. The patient was put in the lithotomy position and the size of pessary was used to fit in the vagina where it enclosed and supported the cervix. Clinical confirmation was done after

insertion to ensure that the devices were in the right position. Patients were monitored on immediate discomfort, bleeding, pain or vaginal discharge. They were to report as soon as possible in case of contractions of the uterus, vaginal leakage, fever, discharge of foul odor, vaginal hemorrhage or intense pain around the pelvic area. Indicators of successful labour (pessary removed), rupture of membranes, gross vaginal bleeding, infection or delivery, included removal of pessary.

In Group B, non-absorbable suture was used to apply McDonald cervical cerclage. Aseptically, it was done by a consultant gynecologist. The patient had been put on lithotomy position after proper preparation and anesthesia according to the institutional protocols. The cervix was exposed, a purse-string suture was applied round the cervix as high as possible near internal os making several circumferential bites. The suture was then purposely tied to support the cervix in a mechanical fashion. The outcomes of the procedure (uterine contractions, vaginal bleeding, and membrane rupture, pain, and infection signs) were monitored in patients. The removal of the stitch is indicated when labour starts, the membranes are ruptured, there is an indication of infection, the patient is experiencing a lot of bleeding, or the baby is showing signs of birth.

Both the groups were given normal obstetric care as per the hospital protocol. It was followed up until delivery. In the course of the antenatal follow-ups patients were evaluated with respect to preterm labour, uterine contractions, vaginal bleeding and per vaginum leaking, fever and vaginal discharge. The complications arising with the pessary or cerclage were recorded. During delivery, type of labour was noted as either spontaneous or induced and mode of delivery was noted as either spontaneous vaginal delivery, instrumental delivery or caesarean section. Interested outcomes in the fetus included the birth weight and the neonatal intensive care unit admission. Weight of the babies at birth was recorded in kilos by weighing them immediately after giving birth in a standard neonatal weighing scale. The NICU admission was considered as admission of the newborn to the neonatal intensive care unit within 12 hours of birth.

Data were inputted and analyzed with SPSS version 25. The mean and the standard deviation were used to present quantitative variables of age, gestational age, height, weight, body mass index, parity, number of abortions and birth weight. Type of labour, mode of delivery and NICU admission were categorical variables, which were presented in the form of frequency and percentage. An independent sample t-test was used to compare the mean birth weight between the two groups. The chi-square test was used to compare NICU intake between the two. Stratification controlled effect modifiers like age, gestation age, body mass index, parity, number of abortions, type of labour and mode delivery. Stratification was followed by the use of independent sample t-test and application of chi-square test where necessary. A p-value of ≤0.05 was considered statistically significant.

RESULTS

Both groups were similar in terms of their baseline demographic and obstetric characteristics. The mean age of patients in Group A was 27.42 ± 4.36 years, while the mean age in Group B was 27.91 ± 4.21 years. The average gestation week of presentation in Group A (28.87 2.14) and Group B (28.62 2.31) was 28.87 and 28.62, respectively. The mean BMI was 25.96 ± 3.18 kg/m^2 in Group A and 26.21 ± 3.24 kg/m^2 in Group B. The mean parity was 1.82 ± 1.08 in Group A and 1.91 ± 1.12 in Group B. The mean number of previous abortions was 0.56 ± 0.71 in Group A and 0.61 ± 0.76 in Group B. An indicator of no statistically significant difference was observed between the two groups in terms of baseline variables meaning that both groups were similar at the beginning of intervention. (Table-I & II).

In terms of type of labour, 67 patients in Group A and Group B had spontaneous labour and 24 patients and 29 patients respectively needed induction of labour. There was no statistically significant difference between the two groups type of labour. On the same note mode of delivery was similar in both groups. Group A had 54 women who gave birth through spontaneous vaginal birth, 8 women who were delivered instrumentally and 29 women who delivered through the caesarean section. Group B: Spontaneous vaginal birth was found to be common

in 49 patients, instrumental birth in 10 patients, and caesarean section in 32 patients. The mode of delivery among the two groups had no significant difference. (Table-III).

The primary fetal outcome was birth weight. Group A registered a mean birth weight of 2.74 +/- 0.89 kg whereas Group B registered 2.31 +/- 0.81 kg. The mean birth weight was greater in the Arabin cervical pessary group than in the McDonald stitch group. Applying independent sample t-test, the difference obtained was statistically significant with p-value of 0.001. (Table-III). Group A included 28 neonates who had to have NICU admission within 12 hours of birth and Group B included 48 neonates. In Group A there were 63 neonates who did not need to enter NICU and in Group B there were 43 neonates who did not need to enter NICU. The Arabin cervical pessary group had a lower NICU admission than the McDonald stitch. It was a statistically significant difference with p-value of 0.003. (Table-III)

The stratification was conducted to moderate the effect modifiers such as age, gestational age, BMI, parity, type of labour and mode of delivery. In most subgroups, after stratification, birth weight was still higher in the Arabin pessary group. Another factor was that NICU admission also tended to be low in the Arabin pessary group relative to the McDonald stitch group. These data indicated that the Arabin cervical pessary was linked with better fetal outcome in each regard: mean birth weight and NICU hospitalization. (Table-IV)

DISCUSSION

In the current research paper, Arabin cervical pessary was noted to have a better outcome on the fetus compared to McDonald cervical stitch in women with threatened preterm labour with cervical lengths of lower than 25 mm. The birth weight of a child in the Arabin pessary group was greater than in the McDonald stitch group, 2.74 ± 0.89 kg in group-A and 2.31 ± .81 kg in group-B, respectively, with a statistical significant difference. Likewise, the admission of NICU was less in the Arabin pessary group 30.8 percent than 52.7 percent in the McDonald stitch group.

TABLE-I

Baseline Characteristics of Study Participants.

Variable	Group A: Arabin Pessary n=91	Group B: McDonald Stitch n=91	P-Value
Age, years	27.42 ± 4.36	27.91 ± 4.21	0.442
Gestational age at presentation, weeks	28.87 ± 2.14	28.62 ± 2.31	0.449
Weight, kg	67.84 ± 8.91	68.29 ± 9.16	0.737
Height, m	1.61 ± 0.06	1.61 ± 0.05	0.811
BMI, kg/m^2	25.96 ± 3.18	26.21 ± 3.24	0.600

TABLE-II

Distribution of patients according to age and gestational age at presentation.

Variable	Group A: Arabin Pessary n=91	Group B: McDonald Stitch n=91	Total n=182	P-Value
Age group				
18–25 years	31 (34.1%)	29 (31.9%)	60 (33.0%)	0.942
26–30 years	38 (41.8%)	39 (42.9%)	77 (42.3%)	
31–35 years	22 (24.2%)	23 (25.3%)	45 (24.7%)	
Gestational age at presentation				
≤28 weeks	34 (37.4%)	37 (40.7%)	71 (39.0%)	0.890
29–32 weeks	41 (45.1%)	39 (42.9%)	80 (44.0%)	
33–36 weeks	16 (17.6%)	15 (16.5%)	31 (17.0%)	

TABLE-III

Comparison of labour characteristics and fetal outcomes between both groups.

Variable	Group A: Arabin pessary n=91	Group B: McDonald Stitch n=91	P-Value
Type of labour			
Spontaneous labour	67 (73.6%)	62 (68.1%)	0.411
Induction of labour	24 (26.4%)	29 (31.9%)	
Mode of delivery			
Spontaneous vaginal delivery	54 (59.3%)	49 (53.8%)	0.719
Instrumental delivery	8 (8.8%)	10 (11.0%)	
Caesarean section	29 (31.9%)	32 (35.2%)	
Birth weight, kg	2.74 ± 0.89	2.31 ± 0.81	0.001
NICU admission			
Yes	28 (30.8%)	48 (52.7%)	0.003
No	63 (69.2%)	43 (47.3%)	

TABLE-IV

Stratification of birth weight and NICU admission according to age, gestational age, BMI and parity.

Effect Modifier	Category	Birth Weight Group A kg	Birth Weight Group B kg	P-Value	NICU Admission	Group A n (%)	Group B n (%)	P-Value
Age group	18–25 years	2.69 ± 0.87	2.26 ± 0.78	0.047	Yes	10 (32.3%)	16 (55.2%)	0.118
					No	21 (67.7%)	13 (44.8%)	
	26–30 years	2.78 ± 0.91	2.34 ± 0.82	0.029	Yes	11 (28.9%)	21 (53.8%)	0.024
					No	27 (71.1%)	18 (46.2%)	
	31–35 years	2.73 ± 0.88	2.32 ± 0.85	0.121	Yes	7 (31.8%)	11 (47.8%)	0.238
					No	15 (68.2%)	12 (52.2%)	
Gestational age	≤28 weeks	2.21 ± 0.72	1.89 ± 0.65	0.050	Yes	16 (47.1%)	25 (67.6%)	0.036
					No	18 (52.9%)	12 (32.4%)	
	29–32 weeks	2.76 ± 0.81	2.32 ± 0.76	0.016	Yes	10 (24.4%)	19 (48.7%)	0.040
					No	31 (75.6%)	20 (51.3%)	
	33–36 weeks	3.18 ± 0.64	2.81 ± 0.69	0.132	Yes	2 (12.5%)	4 (26.7%)	0.374
					No	14 (87.5%)	11 (73.3%)	
BMI group	Normal BMI	2.79 ± 0.86	2.38 ± 0.79	0.041	Yes	9 (25.7%)	16 (44.4%)	0.069
					No	26 (74.3%)	20 (55.6%)	
	Overweight	2.72 ± 0.91	2.29 ± 0.83	0.038	Yes	13 (31.7%)	23 (56.1%)	0.032
					No	28 (68.3%)	18 (43.9%)	
	Obese	2.61 ± 0.92	2.18 ± 0.84	0.196	Yes	6 (40.0%)	9 (64.3%)	0.383
					No	9 (60.0%)	5 (35.7%)	
Parity group	Primipara	2.71 ± 0.84	2.28 ± 0.80	0.039	Yes	11 (28.2%)	20 (50.0%)	0.038
					No	28 (71.8%)	20 (50.0%)	
	Multipara	2.76 ± 0.91	2.33 ± 0.82	0.013	Yes	17 (32.7%)	28 (54.9%)	0.032
					No	35 (67.3%)	23 (45.1%)	

These results indicate that Arabin pessary can play a positive role in enhancing the neonatal outcome, which is most likely to lower the cervical pressure, change the uterocervical angle, and extend the pregnancy among patients with short cervix who are chosen.

The pessary group showed a higher birth weight which is a clinical finding since birth weight has direct relations with neonatal maturity, respiratory stability, feeding tolerance and requirement of intensive neonatal care. In the current study, the difference between the 2 groups of about 0.43 kg was biased towards Arabin pessary. This finding is partially substantiated by the current trials and reviews that have found out pessary to be a reasonable non-surgical intervention to use in selected women with cervical shortening. Van Dijk et al. have compared both cervical pessary with vaginal progesterone in singleton pregnancies where the cervix is short and found that pessary can still be an effective intervention under investigation to prevent the occurrence of adverse perinatal outcome, though no evidence of superiority over progesterone was found.[11] Likewise, a meta-analysis by Abu-Zaid et al. (2025) indicated that cervical pessary and vaginal progesterone failed to differ significantly in preterm delivery less than 37, 34 or 28 weeks of pregnancies, and major neonatal outcome events like sepsis, intraventricular bleeding, necrotising enterocolitis or fetal/neo mortality.[12] These results imply that pessary is no less than a similar conservative intervention in the chosen patients, which is compatible with the positive weight trend of the neonatal in the current research.

The current results are not all agreeable to all the available evidence, though. The study by Hoffman et al. also included a randomized trial comparing the individuals with a singleton gestation and a 20 mm or lower cervical length and concluded that cervical pessary was not more effective in reducing the risk of preterm birth.[13] This differs with the current study where better mean birth weight was observed in the pessary group as well as reduced NICU admission. The variation might be because of differences in the population of study, length cut-off in cervicogenic aspects, the gestational age of study and isoquinolage suspension, the operator experience and the policies of local neonatal admissions. Later on in our study, we have also considered women who had threatened preterm labour though there are studies that have randomly assigned asymptomatic women with short cervix. The potential effect of these clinical differences on mechanical support devices is possible.

Another significant finding is the decreased NICU admission rate in the Arabin pessary group. In the pessary group, NICU admission was known to have occurred in 28 neonates as compared to 48 neonates in the cerclage group. This observation might indicate improved fetal development, extended latency to delivery or reduced incidence of preterm delivery in the pessary group. Comparing cerclage, pessary and vaginal progesterone in women with short cervix, Hezelgrave et al. concluded that the three treatments were widely similar in terms of preventing preterm birth when evaluated in an equivalence context.[14] Their finding that any of these treatments could be rational in women with short cervix proves the idea that pessary could also be regarded as a legitimate treatment method. However, their results do not definitely indicate better outcomes of pessary, and the current study was able to show improved outcomes of pessary in terms of neonates. This disparity can be once again attributed to patient selection and local practice.

Conversely, new findings have also been in support of cerclage even among at-risk groups. A PC piloting study by van Gils et al. that contrasted the use of pessary with that of cerclage to prevent recurrent preterm birth found that non-inferiority of pessary could not be established; sustained preterm birth below 32 weeks of gestation rate was reported in 33.8% of the pessary and 24.0% of the cerclage, which makes the authors recommend cerclage in that recurrent preterm birth group.[15] This is contrasted to our findings, whereby pessary had reduced NICU admissions and better birth weight as compared to McDonald stitch. This may be due to the fact that the PC study involved women who had prior spontaneous preterm birth and/or recurrent risk as compared to our study which centered on threatened preterm labour and short cervix. Women who have a good obstetric history of recurrent preterm birth might well also be gaining surgical reinforcement over women being chosen primarily by the shortening in current cervical length.

The current findings are in more agreement with the randomized trial by Gascón et al., that compared cervical cerclage to cervical pessary in women with short cervix and found no significant difference in preterm delivery before 34 weeks with pessary

having fewer adverse effects like less bleeding during the insertion and removal procedure.[16] Even though the maternal side effects were not the primary measure in our research, the reduced NICU admissions rate in the pessary group may lead to the consideration of pessary as a safe and effective option in a chosen group of patients. The ease of use of pessary can also minimize the probable irritation of the uterus during the procedures, exposure to anesthesia, and surgical trauma that may be one of the reasons behind the improved fetal outcome in our cohort.

McDonald Cerclage is also an established approach to cervical insufficiency especially in women who had a mid-trimester loss or who have witnessed spontaneous preterm birth in the past. Gulersen et al examined short cervix at 24-26 gestational length at 24-26 weeks and discovered that cerclarge made no evident imposition or augmentation on preterm labor in singleton gestations at the 24-26 gestational length.[17] A different study by Gulersen et al. found out that in women without pre-existing cases of spontaneous preterm birth, but whose cervix is extremely short (10 mm or less), cerclage can be contemplated.[18] These studies indicate that the advantage of cerclage may be greatest in extremely short cervix or to certain high-risk phenotypes. In the current trial, inclusion criteria were cervical length that was below 25 mm and this may have included a number of women who have mild to moderate cervical shortening; they would have responded well to pessary without undergoing surgical cerclage.

In our study stratified analysis revealed that birth weight was higher in the pessary group in most age, gestational age, BMI and parity groups. Women aged 1825 years and 2630 years showed a significant difference but, no significant difference was found among women aged 3135 years. Equally, NICU admission was also much less in the pessary group of women aged 2630 years. The findings indicate that fetal outcome might be influenced by the maternal age; however the direction effect was not the same in all age brackets. Past literature has placed a strong emphasis on the fact that the outcome of cervical interventions can be influenced by the existence of obstetric risk in the baseline as opposed to age per se. Breuking et al. demonstrated that the cut-off value of short cervix selected affects not only the prevalence and distribution of cervical shortening but also elucidate how the definition of a case impacts risk classification and study results.[19] This could be the reason why different studies present different results when the different thresholds of cervical length are used.

The stratification of gestational age revealed that the pessary group weighed more than the cerclage group at all gestational age groups, and with much difference in the less then 28 weeks group, and 2932 weeks group. These same groups of gestational age saw a significant reduction in NICU admission in the pessary group. Clinical implications of these findings are in the fact that the greatest benefit to an infant will occur when the intervention averts very premature birth. Cerclage and pessary were compared with or without progesterone in short cervix twin pregnancies by He et al., who reported equal preterm birth rates (less than 34 weeks) with lower rates of birth before 28 weeks and perinatal mortality in the cerclage group.[20] Though the results of that study in twin pregnancies cannot be directly applied in our singleton group, it demonstrates that the results can vary based on plurality and severity of early preterm risk.

Combination approaches have also been tested in recent evidence. Zhuang and colleagues evaluated the cervical pessary in conjunction with vaginal progesterone and commented on the suggested combination of both to prevent preterm birth.[21] Chau et al. report that cervical pessary did not outperform vaginal progesterone in singleton pregnancy with short cervix.[22] These results demonstrate that although pessary is appealing as it can be non-surgical and is removed, this advantage can be increased or reduced based on co-interventions. There was also an identification by Thom et al. of an urgent need of prospective meta-analysis of pessary trials due to the varying results indicated by previous studies.[23] This justifies additional well-planned local randomized trials between pessary, cerclage, progesterone and combination methods.

Concerning the technique of cerclage and the materials, Morton et al. in the C-STICH trial have reported that no statistically significant difference

existed in the case of monofilament and braided sutures when it comes to pregnancy loss, but infection-related eventualities necessitated further consideration.[24] This is applicable as the outcome of McDonald rotation can be influenced by all of the indications as well as by the suture type and timing, infection history, and perioperative management. Sung et al. analyzed the outcome of the neonatal after cerclage in a nulliparous singleton pregnancy and further pointed out that the outcome measures of neonatal pregnancy should be the basis through which the outcome of cervical interventions is judged, not just based on the length of gestation.[25] Birth weight and NICU admission were chosen as the fetal outcomes in the current study and both were in favour of Arabin pessary.

LIMITATIONS

There were a few limitations associated with this study. It was also carried out in one tertiary care hospital, which might not necessarily be applicable in any other healthcare setting. The groups were also relatively small (n=91) in size. Only two outcomes of the fetuses were measured birth weight and NICU admission but failure to measure the other significant outcomes of the neonatal including Apgar score, respiratory distress syndrome, sepsis, neonatal need of ventilatory support, long-stay in the NICU, and perinatal mortality. Folw up neonatal follow-up was not done either in the long term. The intervention of Arabin pessary was not blinded since it was different compared to the McDonald stitch and this could have been a source of observation bias. Cervical shortening was not analyzed separately and potential confounding factors like prior preterm birth, progesterone use, antenatal steroid use, maternal infection and socioeconomic status were not adequately evaluated. Moreover, hospital policy and clinician judgment might have affected the admission of patients to NICU. Greater multicenter studies with comprehensive infant outcomes and follow-up are suggested.

CONCLUSION

In general, the current research concluded that Arabin cervical pessary had indicated a great superiority in the mean birth weight and reduced NICU admission as compared to McDonald stitch. These findings comply with the literature that claims that pessary can be an effective, less invasive solution to short cervix, but are inconsistent with those that found that cerclage or progesterone achieved the same or better results. Thus, the results must be placed in the framework of patient selection, the severity of cervical length, the period of gestation at the time of treatment, obstetric history, and the access to neonatal care. More multicentre randomised trials that incorporate standardised cervical length thresholds, record progesterone administration, gestational weeks of pregnancy and toxication, maternal morbidity, and postnatal outcomes are suggested.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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REFERENCES

1. Cao G, Liu J, Liu M. **Global, regional, and national incidence and mortality of neonatal preterm birth, 1990-2019.** JAMA Pediatr. 2022; 176(8):787-96.
2. Ohuma EO, Moller AB, Bradley E, Chakwera S, Hussain-Alkhateeb L, Lewin A, et al. **National, regional, and global estimates of preterm birth in 2020, with trends from 2010: A systematic analysis.** Lancet. 2023; 402(10409):1261-71.
3. Mitrogiannis I, Evangelou E, Efthymiou A, Kanavos T, Birbas E, Makrydimas G, et al. **Risk factors for preterm birth: An umbrella review of meta-analyses of observational studies.** BMC Med. 2023; 21(1):494.
4. Guerby P, Girard M, Marcoux G, Beaudoin A, Pasquier JC, Bujold E. **Midtrimester cervical length in low-risk nulliparous women for the prediction of spontaneous preterm birth: Should we consider a new definition of short cervix?** Am J Perinatol. 2023; 40(2):187-93.
5. Abdel-Aleem H, Shaaban OM, Abdel-Aleem MA, Aboelfadle Mohamed A. **Cervical pessary for preventing preterm birth in singleton pregnancies.** Cochrane Database Syst Rev. 2022; 12(12):CD014508.
6. McAuliffe L, Issah A, Diacci R, Williams KP, Aubin AM, Phung J, et al. **McDonald versus Shirodkar cerclage technique in the prevention of preterm birth: A systematic review and meta-analysis.** BJOG. 2023; 130(7):702-12.
7. Vargas M, Yañez F, Elias A, Bernabeu A, Goya M, Xie Z, et al. **Cervical pessary and cerclage placement for preterm birth prevention and cervicovaginal microbiome changes.** Acta Obstet Gynecol Scand. 2022; 101(12):1403-13.
8. Piccioni MG, Del Negro V, Bruno Vecchio RC, Faralli I,

Savastano G, Galoppi P, et al. **Is the Arabin Pessary really useful in preventing preterm birth? A review of literature.** J Gynecol Obstet Hum Reprod. 2021; 50(4):101824.
9. Abd Rahman R, Atan IK, Ali A, Kalok AM, Ismail NAM, Mahdy ZA, et al. **Use of the Arabin pessary in women at high risk for preterm birth: Long-term experience at a single tertiary center in Malaysia.** BMC Pregnancy Childbirth. 2021; 21(1):368.
10. Jafarzade A, Aghayeva S, Mungan T, Biri A, Ekiz OU. **Arabin-pessary or McDonald cerclage in cervical shortening?** Rev Bras Ginecol Obstet. 2023; 45(12):e764-e769.
11. van Dijk CE, van Gils AL, van Zijl MD, Koullali B, van der Weide MC, van den Akker ESA, et al. **Cervical pessary versus vaginal progesterone in women with a singleton pregnancy, a short cervix, and no history of spontaneous preterm birth at less than 34 weeks' gestation: Open label, multicentre, randomised, controlled trial.** BMJ. 2024; 384:e077033.
12. Abu-Zaid A, Baradwan SM, Hafedh B, Tawfiq A, Hakeem GF, Alkaff A, et al. **Cervical pessary versus vaginal progesterone to prevent preterm birth in women with a singleton pregnancy and a short cervix: A systematic review and meta-analysis.** Reprod Sci. 2025; 32(8):2540-57.
13. Hoffman MK, Clifton RG, Biggio JR, Saade GR, Ugwu LG, Longo M, et al. **Cervical pessary for prevention of preterm birth in individuals with a short cervix: the TOPS randomized clinical trial.** JAMA. 2023; 330(4):340-48.
14. Hezelgrave NL, Suff N, Seed P, Robinson V, Carter J, Watson H, et al. **Comparing cervical cerclage, pessary and vaginal progesterone for prevention of preterm birth in women with a short cervix (SuPPoRT): a multicentre randomised controlled trial.** PLoS Med. 2024; 21(7):e1004427.
15. van Gils AL, van Dijk CE, Koullali B, Lugthart MA, Bet BB, van Zijl MD, et al. **Pessary or cerclage (PC study) to prevent recurrent preterm birth: A non-inferiority, randomised controlled trial.** EClinicalMedicine. 2024; 78:102945.
16. Brik M, Carreras E, del Barco E, Gascón A, Goya M, Maiz N, et al. **Cervical cerclage vs cervical pessary in women with cervical insufficiency: A multicentric, open-label, randomised, controlled pilot trial: The CEPEIC trial.** Eur J Obstet Gynecol Reprod Biol X. 2024; 24:100347.
17. Gulersen M, Lenchner E, Nicolaides KH, Otsuki K, Rust OA, Althuisius S, et al. **Cervical cerclage for short cervix at 24 to 26 weeks of gestation: Systematic review and meta-analysis of randomized controlled trials using individual patient-level data.** Am J Obstet Gynecol MFM. 2023; 5(6):100930.
18. Gulersen M, Bornstein E, Domney A, Blitz MJ, Rochelson B. **Cerclage in singleton gestations with an extremely short cervix (≤10 mm) and no history of spontaneous preterm birth.** Am J Obstet Gynecol MFM. 2021; 3(5):100430.
19. Breuking SH, van Dijk CE, Hermes W, Opmeer BC, Mol BWJ, Pajkrt E. **The impact of cut-off values on the prevalence of short cervical length in pregnancy.** Eur J Obstet Gynecol Reprod Biol. 2024; 302:68-74.
20. He YTN, Pham HNH, Nguyen TC, Bui TQ, Vuong NT, Nguyen DTN, et al. **Cervical cerclage versus cervical pessary with or without vaginal progesterone for preterm birth prevention in twin pregnancies and a short cervix: A two-by-two factorial randomised clinical trial.** PLoS Med. 2025; 22(2):e1004526.
21. Zhuang Y, Li H, Na Q, Yin S, Li N. **Prevention of preterm birth by cervical pessary combined with vaginal progesterone: A systematic review and meta-analysis with trial sequential analysis.** Reprod Sci. 2023; 30(1):93-110.
22. Chau MN, Dang VQ, Nguyen TC, Vu ATL, Le XTH, Vo TT, et al. **Cervical pessary is not superior to vaginal progesterone in individuals with a singleton pregnancy and a short cervix: A randomized controlled trial.** Am J Obstet Gynecol. 2025; 232(5):476.e1-476.e8.
23. Thom EA, Saade GR, Askie LM, Ugwu LG, Mol BWJ, Vayssiere C, et al. **PROMPT: prospective meta-analysis for pessary trials study protocol.** Am J Perinatol. 2024; 41(S 01):e2230-e2237.
24. Hodgetts Morton V, Moakes CA, Daniels J, Middleton L, Shennan A, Brocklehurst P, et al. **Cerclage suture type to prevent pregnancy loss in women requiring a vaginal cervical cerclage: The C-STICH RCT.** Health Technol Assess. 2024; 28(40):1-44.
25. Sung JH, Kang D, Hong SY, Park H, Lee YR, Ham S, et al. **Short- and long-term neonatal outcomes according to cerclage in nulliparous singleton women: A national cohort study over 15 years.** J Korean Med Sci. 2025; 40(26):e131.

AUTHORSHIP AND CONTRIBUTION DECLARATION	
1	**Uruj Tariq:** Conceptualization, Supervision, critical review, data collection.
2	**Raheela Farhat Chaudary:** Data analysis.
3	**Jevaria Tariq:** Interpretation.
4	**Sidra Ali Kishwar:** Results derivation.
5	**Aqsa Iram:** Literature review.
6	**Adeela Arif:** Assisted in research.