

## **The Outcome of Pregnancy and Preterm Delivery after Conization of the Cervix**

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**Summary.** Of 607 women who had undergone conization of the cervix in 1973–1980 in the country of Funen, Denmark, 128 women had completed a total of 166 pregnancies before April 1, 1982. There was apparently no adverse effect of conization on these pregnancies. The frequency of delivery before 37 completed weeks of gestation, of a birthweight less than 2500 g or below the 10th percentile did not differ from that for a population standardized for age and parity. Five women had a second trimester abortion in a pregnancy after conization, but without evidence of cervical insufficiency. Eleven conized women had a caesarean section in a subsequent pregnancy for reasons unrelated to conization.

**Key words:** Cervix conization – Pregnancy complication – Preterm birth

### **Introduction**

It is still uncertain whether or not conization of the cervix increases the risk of preterm deliveries in subsequent pregnancies. In a case control study, Jones et al. (1979) found a 3.4 fold increase in the frequency of preterm delivery and a 2.5 fold increase in the frequency of a birth below 2500 g. Weber and Obel (1979) found no significant increase in the frequency of a birth weight below 2501 g after conization compared to matched controls.

The aim of this study was to evaluate the outcome of singleton pregnancies proceeding beyond 28 weeks gestation in women who had had a cone biopsy performed and to compare this with the outcome in singleton pregnancies in women standardized for age and parity.

## Materials and Methods

### *Conization Group*

At the data processing unit at Odense University Hospital, records of all admissions to hospitals in the county of Funen from April 1, 1973 are available. Between April 1, 1973 and December 31, 1980 a total of 607 women had a conization performed in the county of Funen. The age of these women is shown in Table 1. The number and outcome of all pregnancies completed after conization and before April 1, 1982, was obtained from the data processing unit for women still living in the county. Women who had left the county all replied to a questionnaire. Clinical records were obtained for all pregnancies going beyond 12 weeks gestation.

A list was made of the number of pregnancies going beyond 28 weeks gestation, the number of preterm deliveries (before 37 weeks completed gestation) and the number of babies weighing less than 2500 g or with a birth weight below the 10th percentile (Sundhedsstyrelsen 1976).

### *Reference Population*

Details are kept of all births at Odense University Hospital, which serves the town of Odense and surrounding rural areas. A small number of patients are referred from other hospitals because of diabetes mellitus, rhesus isoimmunization and severe preeclampsia. I used all 12792 singleton deliveries between 1978 and 1982 as a reference population.

### *Statistical Analysis*

In the conization group, the expected number of preterm deliveries, and the number of babies with a birth weight below 2500 g or below the 10th percentile were calculated within five-year age and parity groups by applying the frequencies in the corresponding group of the reference population. In evaluating the significance of differences between the number observed in the conization group and the number expected to occur in this group, the standard deviation was calculated from the formula:

$$\frac{\text{Observed number} - \text{Expected number}}{\sqrt{\text{Expected number}}}$$

(Armitage 1980).

## Results

During a period of 15 to 72 months after conization 128 women completed a total of 166 pregnancies as shown in Table 2. In none of the five second trimester

**Table 1.** Age of women at time of conization

Age in years	No. of patients
-19	2
20-24	38
25-29	153
30-34	194
35-39	95
40-	125
Total	607

**Table 2.** Outcome of 166 pregnancies after conization in 128 women

Outcome	Order of pregnancy after conization					Total
	First	Second	Third	Fourth	Fifth	
Extrauterine pregnancy	1	0	0	0	0	1
Induced abortion	41	11	1	3	1	57
Spontaneous abortion						
≤ 12 weeks	14	3	1	0	0	18
> 12 weeks	3	2	0	0	0	5
Birth after 28 weeks	69	13	3	0	0	85
Total	128	29	5	3	1	166

abortions was there evidence of cervical incompetence. In four cases the abortions were proceeded by pain and bleeding and in one by leakage of amniotic fluid after an amniocentesis. Two of these patients later gave birth to a healthy child at term.

Eightyfive pregnancies went beyond 28 weeks in 82 women. Three patients delivered twice after conization and the second delivery after conization was invariably normal. The occurrence of preterm delivery, a birth weight below 2500 g or below the 10th percentile is shown in Table 3. The figures for primiparae were similar to those for other parity groups. The only neonatal death was an anencephalic infant born after 29 weeks gestation. Preterm delivery occurred more often than expected, but the difference was not significant (Table 3). There were no differences between observed and expected numbers of children with a birth weight below 2500 g or the 10th percentile. A caesarean section was performed in 11 cases in the conization group, but in none of these cases was cervical stenosis the reason.

**Table 3.** Outcome of 85 pregnancies after conization, proceeding beyond 28 weeks gestation

	Parity at time of delivery					Total Observed	Total Expected	p
	1	2	3	4	5			
No. with < 37 weeks gestation	1	5	1	2	0	9	5.9	0.20
No. with birth weight < 2500 g	1	3	1	1	0	6	5.8	0.93
No. with birth weight below the 10th percentile	0	1	2	1	1	5	3.9	0.58
Total no. of births	10	35	25	13	2	85		

## Discussion

The frequency of preterm delivery and low birth weight is influenced by a number of factors like parity and a previous history of preterm delivery (Bakketeig and Hoffmann 1981). Thus the composition of the study group may influence the observed frequencies. Such factors may be controlled by matching. Jones et al. (1979) matched for age, parity and social class and Weber and Obel (1979) for age and parity. In this study I matched for age and parity, but not for a previous history of preterm birth, social class or smoking habits. The number of women with diabetes, rhesus immunization and severe preeclampsia in the reference group was considered too small to have increased significantly the frequency of preterm delivery or low birth weight.

Conization apparently had no adverse effect on subsequent pregnancies in respect of premature delivery, a birth weight below 2500 g or below the 10th percentile. No differences were found between parity groups, but the number of primiparae was small.

Jones et al. (1979) found that the risk of preterm delivery was greater in the second than in the first pregnancy after conization. This finding was not confirmed in my study.

Local destructive therapy of cervical intraepithelial neoplasia (CIN) has gained much popularity in recent years, but in women with CIN extending into the cervical canal, conization is still the treatment of choice and should not be delayed or avoided because of worry about subsequent preterm delivery.

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