

THE EFFECT OF WOMEN'S AGE DURING PREGNANCY ON THE CASE OF HYPOSPADIAS IN CHILDREN <18 YEARS OLD AT ADAM MALIK HOSPITAL IN 2015-2020

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ABSTRACT

Objective: The purpose of this study was to determine the effect of a woman's age during pregnancy on the incidence of hypospadias in children. **Material & Methods:** This research is an analytic study with a case control design. The sampling technique is a non-probabilistic technique with consecutive sampling. This study was analyzed by univariate and bivariate. **Results:** From 62 samples, the number of hypospadias cases was 28 people (90.3%) with woman's age at pregnancy <35 years and 3 people (9.7%) with woman's age at pregnancy ≥ 35 years. While the number of controls was 29 people (93.5%) with woman's age at pregnancy <35 years and 2 people (6.5%) with woman's age at pregnancy ≥ 35 years. **Conclusion:** There is no significant relationship found in this research between a woman's age at pregnancy and the incidence of hypospadias in children.

Keywords: Age, hypospadias, pregnancy.

ABSTRAK

Tujuan: Tujuan dari penelitian ini adalah untuk mengetahui pengaruh usia wanita saat kehamilan terhadap kejadian hipospadia pada anak. **Bahan & Cara:** Penelitian ini adalah penelitian analitik dengan desain case control. Teknik pengambilan sampel yang digunakan adalah teknik non probabilistik dengan consecutive sampling. Penelitian ini dianalisis secara univariat dan bivariat. **Hasil:** Dari 62 sampel, didapatkan jumlah kasus hipospadia berjumlah 28 orang (90,3%) dengan usia wanita saat kehamilan <35 tahun dan berjumlah 3 orang (9,7%) dengan usia wanita saat kehamilan ≥ 35 tahun. Sedangkan jumlah kontrol berjumlah 29 orang (93,5%) dengan usia wanita saat kehamilan <35 tahun dan berjumlah 2 orang (6,5%) dengan usia wanita saat kehamilan ≥ 35 tahun. **Simpulan:** Penelitian ini menunjukkan tidak terdapat hubungan yang signifikan antara usia wanita saat kehamilan dengan kejadian hipospadia pada anak.

Kata kunci: Usia, hipospadia, kehamilan.

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INTRODUCTION

Hypospadias is a congenital abnormality in the form of a urethral opening which is located on the ventral side of the penis and proximal to the tip of the penis. The location of the urethral meatus can be glandular to perineal. In hypospadias, there is no ventral foreskin so the dorsal foreskin becomes excessive (dorsal hood) and is often accompanied by chordae (ventral angulation of the penis). Stenosis of the urethral meatus is occasionally present, and congenital anomalies include maldescent testis or inguinal hernia.¹

The international prevalence of hypospadias during 1980-2010 from 27 surveillance programs worldwide was 20.9 per 10.000 births. The prevalence for each program ranged from 2.1 to 39.1 per 10.000 births. The total international prevalence increased 1.6-fold over the study period, at 0.25 cases per 10.000 births per year ($p < 0.05$).²

Some of the risk factors that can cause hypospadias in children are (1) Age and age: mothers who are 35 years old or older and are obese, (2) Fertility treatment: women who use assisted reproductive technology to assist pregnancy, and (3) Hormones: women who take drugs containing

hormones before or during pregnancy.³ Several other factors such as genetic factors, endocrine factors, and environmental factors are also thought to be involved in the occurrence of hypospadias in children.⁴

In a case-control study conducted by Al-Tamimi (2019) in Iraq, of 22 respondents with gestational age above 33 years, 35.71% (15 people) gave birth to children with hypospadias and 16.67% (7 people) who gave birth to children without abnormalities. Furthermore, for 62 respondents with gestational age under 33 years, 64.29% (27 people) gave birth to children with hypospadias and 83.33% (35 people) gave birth to children without abnormalities.⁵ Avilés (2014) from his research on 279 cases of hypospadias (2007-2010) in Puerto Rico found that maternal age at pregnancy above 40 years was a statistically significant risk factor for giving birth to children with hypospadias.⁶

In a previous study by Tangkudung (2016) at Sardjito General Hospital Yogyakarta, respondents were 120 people, the results showed that respondents with the age of pregnant women over 35 years tended to have 4.17 times higher hypospadias.⁷ Maritska (2015) also conducted research in 2010-2012 in Central Java with a total of hypospadias sufferers as many as 120 people and the results obtained are 33.33% (40 people) who are known to have maternal age at birth with hypospadias sufferers over 35 years.⁸ Lestari (2017) in her research conducted at the Bina Sehat Jember Hospital using chi-square bivariate data analysis showed that two out of six people (33.3%) suffered from hypospadias. While maternal age at pregnancy >35 years, 23 out of 44 people (52.3%) suffered from hypospadias.⁹

OBJECTIVE

The purpose of this study was to determine the effect of a woman's age during pregnancy on the incidence of hypospadias in children.

MATERIAL & METHODS

This study uses an analytical method that assesses the relationship between the independent variable and the dependent variable. The design of this study used a case control method that aims to determine the effect of a woman's age during pregnancy on the incidence of hypospadias in children. This research was conducted at the Haji Adam Malik General Hospital.

The sample of this study was patients below 18 years old with hypospadias and children who were born normally at H. Adam Malik General Hospital in 2015-2020 which met the following criteria: 1. Inclusion criteria: all hypospadias patients who visited Haji Adam Malik Hospital in 2015-2020 and patients aged <18 years either new cases or corrected cases; 2. Exclusion criteria: patients' age that were not recorded in the medical record. The sampling technique used in this study was a non-probabilistic method with consecutive sampling until the number of samples was met. The type of data used is secondary data obtained by researchers from patient medical records.

RESULTS

Table 1. Characteristics of Maternal Age during Pregnancy.

Mothers' Age	N	Percentage (%)
19	1	1.6
20	1	1.6
21	4	6.5
22	2	3.2
23	6	9.7
24	5	8.1
25	4	6.5
26	6	9.7
28	3	4.8
29	6	9.7
30	8	12.9
31	4	6.5
32	3	4.8
33	1	1.6
34	3	4.8
37	2	3.2
38	1	1.6
42	1	1.6
46	1	1.6
Total	62	100

The number of women aged <35 years is 57 people (91.9%) and the number of women aged ≥ 35 years is 5 people (8.1%) with a minimum age of 19 years, a maximum age of 46 years, a median of 28 years, and the most common age 30 years.

The average maternal age during pregnancy in the control group was 27.61 ± 5.572 and the average maternal age during pregnancy in the hypospadias group was 28.32 ± 5.166 , so the total mean age was 27.97 ± 5.341 . The p-value shows 0.054.

Table 2. Characteristics of Congenital Disorders in Children.

Congenital Disorder	N	Percentage (%)
Atrophy and hypertrophy of the corpus cavernosum and penis	3 cases	4.91
Speech delay	3 cases	4.91
Down's Syndrome	1 case	1.63
Unspecified disorder of psychological development	1 case	1.63
Sexual maturation disorder	1 case	1.63
Indeterminate sex	1 case	1.63
Undescended testicle (cryptorchism)	1 case	1.63

Table 3. Average Maternal Age at Pregnancy in Both Groups.

Variable	Mothers' Age
Control (mean±SD) n = 31	27.61 ± 5.572
Hypospadias (mean±SD) n = 31	28.32 ± 5.166
Total (mean±SD) n = 62	27.97 ± 5.341
p value	0.054

The number of hypospadias cases was 28 people (90.3%) with a woman's age at pregnancy <35 years and 3 people (9.7%) with a woman's age at pregnancy ≥ 35 years. While the number of controls was 29 people (93.5%) with a woman's age at pregnancy <35 years and 2 people (6.5%) with a woman's age at pregnancy ≥ 35 years. The Odds Ratio (OR) value is 0.644 and the P value is 0.643.

DISCUSSION

From our results, we found that the P value is 0.054 (>0.05) which means the data is normally distributed so that the research analysis will be continued using the Chi-square test. The results of this study are in line with the research conducted by Bergman et al (2015) which data collected on hypospadias patients in 2001-2010 and obtained the results of 80.5% (6.288 people) with a woman's age at pregnancy <35 years and 19.5% (1.522 people) with a woman's age at pregnancy ≥ 35 years.¹⁰

The P value which showed 0.643 (> 0.05) indicates that there is no significant relationship between the age of women during pregnancy <35 years and the incidence of hypospadias in children compared to the age of women during pregnancy ≥ 35 years at Haji Adam Malik General Hospital in the 2015-2020 period. The results of the odds ratio showed 0.644 (<1) which stated that the woman's age during pregnancy was not a risk factor for hypospadias in children.

The results of this study are in line with research conducted by Bergman et al (2015) which the p-value is 0.051, which means that there is no significant relationship between the age of women during pregnancy ≥ 35 years and the incidence of hypospadias in children.¹⁰

In a study conducted by Aviles (2014) on 279 cases of hypospadias (2007-2010) in Puerto Rico, the odds ratio was 2.63 (>1) which means that maternal age at pregnancy over 40 years is a risk factor that significantly statistically significant giving birth to a child with hypospadias.⁶ In the odds ratio results, this study shows a difference with research conducted by Aviles (2014) because cases of hypospadias are still rare and the research period is less so only a few data on the age of women at pregnancy ≥ 35 years can be collected.

CONCLUSION

Based on the women's age during pregnancy, there were 28 hypospadias children (90.3%) found with women's age at pregnancy <35 years and 3 hypospadias children (9.7%) found with women's age at pregnancy ≥ 35 years. Based on the age classification, the number of women aged <35 years was 57 people (91.9%) and the number of women aged ≥ 35 years was 5 people (8.1%). The results of the odds ratio was 0.644 and p value 0.643 which showed that there was no significant relationship between the woman's age during pregnancy and the occurrence of hypospadias in children.

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