

## THE CHARACTERISTIC PATIENTS WITH UROGENITAL SYSTEM CONGENITAL ABNORMALITIES IN AT RSMH PALEMBANG

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### Abstrak

**Karakteristik Penderita Kelainan Kongenital Sistem Urogenital di RSMH Palembang.** Penelitian terbaru menunjukkan peningkatan kejadian kelainan kongenital pada sistem urogenital yang menduduki urutan terbanyak kedua dalam suatu populasi. Penyebabnya bersifat multifaktorial. Penelitian ini bertujuan untuk mengetahui karakteristik penderita kelainan kongenital pada sistem urogenital. Penelitian ini merupakan penelitian deskriptif observasional dengan pendekatan *cross sectional*. Populasi penelitian adalah rekam medik dari pasien kelainan kongenital pada sistem urogenital. Distribusi karakteristik pasien terbanyak adalah kelompok usia 6-11 tahun (36%), laki-laki (90%), berat badan lahir normal (81%), usia gestasi normal (84%) dan tanpa riwayat keluarga dengan kelainan kongenital (99%). Distribusi karakteristik ibu terbanyak adalah usia hamil 25-35 tahun (50%), paritas 0 (54%), indeks massa tubuh pra-hamil normal (72%), tanpa riwayat *consanguinity* (100%), tidak ada riwayat penyakit sebelum dan atau selama kehamilan (95%), riwayat paparan rokok (98%), dan pekerjaan sebagai ibu rumah tangga (57%). Distribusi karakteristik ayah terbanyak adalah riwayat terpapar rokok (100%) dan pekerjaan petani (29%). Karakteristik pasien terbanyak meliputi: usia pasien saat operasi adalah 6-11 tahun, laki-laki, berat badan lahir normal, usia gestasi normal dan tidak ada riwayat keluarga. Karakteristik ibu terbanyak meliputi: usia ibu hamil 25-35 tahun, nulipara, indeks massa tubuh pra-hamil normal, tidak ada riwayat *consanguinity*, tidak menderita penyakit sebelum dan atau selama kehamilan, terpapar rokok dan bekerja sebagai ibu rumah tangga. Karakteristik ayah terbanyak meliputi: pernah terpapar rokok dan bekerja sebagai petani.

**Kata kunci:** kelainan kongenital pada sistem urogenital, karakteristik pasien, karakteristik ibu, karakteristik ayah.

### Abstract

**The Characteristic Patients With Congenital Abnormalities in Urogenital System at RSMH Palembang.** Recent studies show that there are increasing pattern of urogenital system congenital abnormalities, make it becoming the second most common disorder in the population. Etiology of this cases is multifactorial. Research was to knowing characteristics patient with urogenital system congenital abnormalities. This research is descriptive observational study with cross sectional design. Population of study is medical record of patient with urogenital system congenital abnormalities. Patient distribution most commonly at 6-11 years (36%), male (90%), normal birthweight (81%), normal gestational age (84%) and without family history of congenital abnormalities (99%). Mother characteristics mostly at 25-35 years of pregnancy (50%), nulliparous (54%), normal pre-pregnancy body mass index (72%), no history of *consanguinity*(100%), without any disease before and by the time of pregnancy (95%), have been exposed to cigarette (98%) and becoming housewife (57%). Father characteristics are in highest count at has been exposed with cigarette (100%) and working as farmer (29%). Patient characteristic is most commonly at 6-11 years when undergoing operation, male, normal birthweight, normal gestational age and without family history of congenital abnormalities. Mother characteristic mostly 25-35 years of pregnancy, nulliparous, normal pre-pregnancy BMI, no history of *consanguinity*, no disease before and by the time of pregnancy, have been exposed by cigarette and working as housewife. Father characteristics are generally has been exposed with cigarette and working as farmer.

**Keywords:** urogenital system congenital abnormalities, patient characteristics, mother characteristics, father characteristics.

## 1. Introduction

Congenital abnormalities are defined as abnormalities in the structure or function that occur during intrauterine life. Every year, more than 303,000 newborns die from congenital abnormalities.<sup>39</sup> In Indonesia, the prevalence of congenital abnormalities is 59.3 per 1000 live births in 2006.<sup>38</sup> According to previous research in the Palembang Hospital in January 2015 in December 2015, out of 366 congenital abnormalities, 3.3% were diagnosed with congenital abnormalities of the genital system and 1.9% have abnormalities of the urinary system.<sup>1</sup>

In Europe, the prevalence of congenital abnormalities in the urogenital system is 3.1 per 1000 live births.<sup>5</sup> Other studies in North India, note that the incidence of this disorder is 39.1 per 1000 live births.<sup>3</sup>

At present time there is an increase in the incidence of congenital abnormalities in the urogenital system whose shift position occupies the second most abnormality in a population.<sup>17,15</sup> In his study, Tain et al. stated that the etiology of this disorder is multifactorial involving genetic factors, maternal factors, fetus factors and environmental factors.<sup>35</sup>

Congenital abnormalities in the urogenital system include abnormalities in the number of kidneys, deformity and size, kidney cystic disease, renal obstruction, bladder extrusion, hypospadias, episodes, congenital vaginal, uterine, and cervical abnormalities, genital ambiguos, and other urogenital congenital abnormalities.<sup>29,30</sup> This disorder is commonly found in men and it can be life threatening or cause disability to sufferers. For example, congenital abnormalities in the kidneys and urinary tract are the cause of chronic renal failure in children and predispose to the emergence of cardiovascular disease that lasts a lifetime.<sup>34</sup> In the worst case, it is found that infants with bilateral kidney agenesis die in the first week of life.<sup>36</sup>

With the increasing incidence of congenital abnormalities of the urogenital system and seeing the possible effects that can

occur in the future, this study aims to identify the characteristics of patients with congenital abnormalities in the urogenital system in Palembang RSMH. It is hoped that this study can provide information and benefits in the effort to prevent congenital abnormalities in the urogenital system in Palembang.

## 2. Research Methods

This study was an observational descriptive study with a cross sectional approach. The research was conducted since September until December 2018.

The population of this study is the medical record of patients with congenital abnormalities in the urogenital system in Palembang RSMH for the period of January 1, 2017 June 30, 2018. The inclusion criteria for this study are (1) all patients who have congenital abnormalities in the urogenital system while exclusion criteria include: (1) the diagnosis of congenital abnormalities in the urogenital system includes unspecified and (2) age  $\geq 18$  years. The variables studied were characteristics of people with congenital abnormalities in the urogenital system including: patient characteristics, father characteristics and maternal characteristics. This study uses secondary data in the form of medical records and primary data in the form of interviews with patients' parents by telephone. Data processing and analysis was carried out by univariate analysis.

## 3. Results

Table 1 shows the distribution of the incidence of congenital abnormalities in the urogenital system. The order from the lowest to the lowest is *hypospadias* (63%), *undescended testicle* (18%), *other congenital malformations of female genitalia* (6%), *other congenital malformations of urinary system* (6%), *congenital obstructive defects of renal pelvis and congenital malformations of ureter* (4%), *congenital malformations of male genital organs* (2%) and *congenital malformations of uterus and cervix* (1%).

**Table 1.** Distribution of patients based on congenital malformations of urogenital system (N = 109)

Jenis Kelainan Kongenital	n	%
<i>Congenital malformations of uterus and cervix</i>	1	1
<i>Other congenital malformations of female genitalia</i>	7	6
<i>Undescended testicle</i>	20	18
<i>Hypospadias</i>	69	63
<i>Other congenital malformations of male genitalia organs</i>	2	2
<i>Congenital obstructive defects of renal pelvis and congenital malformations of ureter</i>	4	4
<i>Other congenital malformations of urinary system</i>	6	6
<b>Total</b>	<b>109</b>	<b>100</b>

**Table 2.** Distribution of patients based on the age of the child according to Kail (2011) (N = 109)

Klasifikasi usia anak	n	%
Neonatus (0 minggu s.d 4 minggu)	5	5
Bayi (4 minggu s.d 1 tahun)	4	4
Batita (1 tahun s.d 3 tahun)	29	27
Anak Pra Sekolah (4 tahun s.d 6 tahun)	17	16
Anak Usia Sekolah (6 tahun s.d 11 tahun)	39	36
Remaja (12 tahun s.d 18 tahun)	15	14
<b>Total</b>	<b>109</b>	<b>100</b>

Table 2 above shows the distribution of patients based on the age of the child according to Kail.<sup>13</sup> Patients were recorded as neonates (5%), infants (4%), toddlers (27%), pre-school children (16%), school-age children (36%) and teenagers (14%).

Table 3 shows the distribution of patients by sex. Male patients (90%) while women (10%).

**Tabel 3.** Distribution of patients by sex (N = 109)

Jenis Kelamin	n	%
Laki-laki	98	90
Perempuan	11	10
<b>Total</b>	<b>109</b>	<b>100</b>

Table 4, shows the distribution of patients based on birth weight. From 109 subjects, there were 26 missing values. The results showed that most (81%) patients had normal birth weight, 18% of patients had less birth

weight and 1% of patients had excess birth weight.

**Table 4.** Distribution of patients based on birth weight (N = 83)

Berat Badan Lahir	n	%
Kurang (<2500 gram)	15	18
Normal (2500-4000 gram)	67	81
Berlebih (>4000 gram)	1	1
<b>Total</b>	<b>83</b>	<b>100</b>

**Table 5.** Distribution of patients based on gestational age

Usia Gestasi	n	%
Preterm (<37 minggu)	13	16
Aterm (37-42 minggu)	70	84
Postterm (>42 minggu)	0	0
<b>Total</b>	<b>83</b>	<b>100</b>

Table 5 shows the distribution of patients based on gestational age. From 109 subjects, there were 26 missing values. The proportion of patients born preterm (16%) and patients born at term (84%). No patient was born postterm.

**Table 6.** Distribution of patients based on birth weight and gestational age (N = 83)

Usia Gestasi	Berat Badan Lahir			Total
	Kurang	Normal	Berlebih	
Preterm (<37 minggu)	62%	38%	0%	13
Aterm (37-42 minggu)	10%	89%	1%	70
Postterm (>42 minggu)	0%	0%	0%	0
<b>Total</b>	<b>18%</b>	<b>81%</b>	<b>1%</b>	<b>83</b>

In table 6, patients with congenital abnormalities of the urogenital system with less birth weight are more likely to be born at less than a month's gestational age (62%), whereas patients with normal birth weight tend to be born at quite month gestation (89%). Thus, it can be assumed that patients with a gestational age less than a month are at risk for having a less birth weight.

**Table 7.** Distribution of patients based on family history with congenital abnormalities in the urogenital system (N = 109)

Riwayat Keluarga	n	%
Ada riwayat	1	1
Tidak ada riwayat	108	99
<b>Total</b>	<b>109</b>	<b>100</b>

Table 7 shows the distribution of patients based on family history. The majority (99%) of patients do not have a family history of congenital abnormalities of the urogenital system. Only 1% of patients have a family

history of congenital abnormalities of the urogenital system.

The distribution of mothers based on age during pregnancy is presented in table 8. Of the 109 subjects, the majority (50%) of patients had mothers aged 25-35 years. The proportion of groups <25 years old is 39% while > 35 years is 12%.

**Table 8.** Mother's distribution by age during pregnancy (N = 109)

Usia Ibu Sewaktu Hamil	n	%
<25	42	39
25-35	54	50
>35	13	12
<b>Total</b>	<b>109</b>	<b>100</b>

**Table 9.** Mother's distribution based on parity (N = 83)

Paritas	n	%
0	45	54
1	21	25
2	9	11
3	6	7
4	2	2
<b>Total</b>	<b>83</b>	<b>100</b>

In table 9, the distribution of mothers based on parity is presented. From 109 subjects, there were 26 missing values. Of the 83 subjects, it was known that groups of mothers with parity 0 (54%), parity 1 (25%), parity 2 (11%), parity 3 (7%) and parity 4 (2%).

The distribution of mothers based on pre-pregnancy body mass index is presented in table 10. Of the 109 subjects, there were 26 subjects missing values. Of 83 subjects, the proportion of mothers with less BMI (18%), normal BMI (72%), excessive BMI (8%) and obesity (1%).

**Table 10.** Mother's distribution based on body mass index before pregnancy (N = 83)

Indeks Massa Tubuh	n	%
Kurang (<18,50)	15	18
Normal (18,50-24,99)	60	72
Berlebih (25,00-29,99)	7	8
Obesitas (≥30)	1	1
<b>Total</b>	<b>83</b>	<b>100</b>

Table 11 shows the distribution of pre-pregnant IMT weight gain according to IOM recommendations. From 109 subjects, there were 26 missing values. Of the 83 subjects, the majority (60%) added weight according to

recommendations and 40% did not match recommendations.

**Table 11.** Distribution of weight gain during pregnancy based on BMI according to IOM recommendations before pregnancy (N = 83)

Sesuai Rekomendasi IOM	n	%
Ya	50	60
Tidak	33	40
<b>Total</b>	<b>83</b>	<b>100</b>

In table 12, the distribution of mothers based on consanguinity history is presented. From 109 subjects, there were 26 missing values. Of 83 subjects, there were no mothers from this disorder patient who had a consanguinity history (100%).

**Table 12.** Distribution based on consanguinity history

Riwayat Consanguinity	n	%
Ada riwayat	0	0
Tidak ada riwayat	83	100
<b>Total</b>	<b>83</b>	<b>100</b>

Distribution of mothers based on disease history before and or during pregnancy is presented in table 13. Of the 109 subjects, 95% of mothers did not have a history of disease before and or during pregnancy, 5% of mothers with hypertension and only 1% of mothers with diabetes mellitus.

**Table 13.** Distribution of mothers based on history of diseases before and/or during pregnancy (hypertension and diabetes mellitus) (N = 83)

Riwayat Penyakit Sebelum dan atau Selama Kehamilan	n	%
Tidak ada	103	95
Hipertensi	5	5
Diabetes Melitus	1	1
<b>Total</b>	<b>109</b>	<b>100</b>

**Table 14.** Maternal distribution based on history of exposure to teratogenic agents (cigarettes, alcohol, and drugs) (N = 83)

Riwayat Paparan Agen Teratogenik	n	%
Tidak ada	2	2
Terpapar rokok	81	98
<b>Total</b>	<b>83</b>	<b>100</b>

Table 14 above shows the distribution of mothers based on a history of exposure to teratogenic agents during pregnancy (cigarettes, alcohol, and drugs). From 109

subjects, there were 26 missing values. Of 83 subjects, the majority (98%) of mothers were exposed to cigarettes and 2% of mothers were not exposed to teratogenic agents during their pregnancy.

**Tabel 15.** Maternal distribution based on occupations (N = 109)

Pekerjaan Ibu	n	%
IRT	62	57
Wiraswasta	5	5
Petani	27	25
PNS	13	12
Farmasis	1	1
Swasta	1	1
<b>Total</b>	<b>109</b>	<b>100</b>

Distribution of mothers based on work is presented in table 15 above. The most types of work are housewives (57%), followed by farmers (25%), civil servants (12%), entrepreneurs (5%), pharmacists and the private sector, each (1%).

Table 16 shows father's distribution based on cigarette exposure history. From 109 subjects, there were 26 missing values. Of 83 subjects, 100% of fathers have been exposed to cigarettes.

**Tabel 16.** Father's distribution based on cigarette exposure history (N = 83)

Riwayat Ayah Paparan Rokok	n	%
Terpapar	83	100
Tidak terpapar	0	0
<b>Total</b>	<b>83</b>	<b>100</b>

**Tabel 17.** Father's distribution based on work (N = 109)

Pekerjaan Ayah	n	%
Petani	32	29
Swasta	30	28
Wiraswasta	18	17
Buruh	14	13
PNS	9	8
POLRI/TNI	6	6
<b>Total</b>	<b>109</b>	<b>100</b>

The distribution of fathers based on work is presented in table 17 above. The most types of work of fathers are farmers (29%), followed by the private sector (28%), entrepreneurs (17%), laborers (13%), civil servants (8%) and POLRI / TNI (6%).

#### 4. Discussion

##### Distribution of patients based on age of child according to hook (2011)

Table 2 shows the proportion of the age of most patients when performing surgery is the age of 6-11 years (36%). Previous research stated that the highest age of patients undergoing surgery was age 6-10 years (38.1%). The patient's ignorance is the reason for the delay in the operation.<sup>39</sup>

American Academy of Pediatric recommends that the optimal time for surgery is the age of 6-12 months.<sup>35</sup> This is because far more abundant fibroblasts, collagen, elastin and granulation tissue are produced, so the wound healing process will take place quickly.<sup>2</sup>

##### Distribution of patients by sex

Table 3 shows the majority (90%) of patients with congenital abnormalities of the urogenital system are men. Previous research noted that men were more often (60%) than women (40%).<sup>30</sup>

Until now, there is no explanation for male higher incidence than women. According to studies of mouse embryos, the growth rate of male mice embryos tends to be faster and has a metabolic rate twice as high as female embryos during the preimplantation phase, making it susceptible to stressors, inducing the production of ROS which has a negative effect on endothelial structure and function.<sup>25</sup>

##### Distribution of patients based on birth weight

Table 4 shows that the majority (81%) of patients have normal birth weight. Previous studies have noted that the majority (91%) of babies born with congenital abnormalities have a normal birth weight.<sup>1</sup> Different findings note that 64% of infants with this disorder were born with low body weight.<sup>30</sup> In this study, 18% of patients were born with less weight and 1% of patients born with excess weight. The cause of LBW is still uncertain. Based on the theory, one of the causes is

placental insufficiency which inhibits blood flow and transport of nutrients to the fetus.<sup>19</sup>

### **Distribution of patients based on gestational age**

Table 5 shows the majority (84%) of patients born quite month. Previous studies recorded 88% of infants with congenital abnormalities born quite month.<sup>4</sup> On the other hand, different studies noted that infants with congenital abnormalities of the urogenital system were born more prematurely (9.89%) than enough months.<sup>3</sup> There is no definitive explanation regarding the causes of premature birth. The theory states that preterm birth is a multifactorial process involving medical factors, obstetric factors and sociodemographic factors.<sup>28</sup> Mufida also states that premature occurrence is associated with the presence of placental insufficiency.<sup>22</sup>

In table 6, it is found that patients with less than a month's gestational age are at risk of having less birth weight because, at that age the fetus does not have time to experience a period of rapid development for weight gain.<sup>20</sup>

### **Distribution of patients based on family history**

Table 7 shows, of the 109 subjects, only 1 patient had a family history of the same congenital disorder. Previous research noted that of the 40 subjects studied, there were 5 patients who had a family history of congenital abnormalities.<sup>30</sup>

One patient who had a family history of congenital abnormalities was diagnosed as hypospadias. Research before stating that there was a familial clustering tendency in hypospadias development, namely hypospadias men with the same disorder. The presence of gene polymorphisms involved in androgen metabolism is thought to play an important role in this event.<sup>14</sup>

### **Distribution of mothers based on age during pregnancy**

Table 8 shows the majority of maternal patients (50%) aged 25-35 years during their pregnancy. These data are consistent with previous studies which noted that 80.6% of infants with congenital abnormalities have mothers aged 25-35 years.<sup>4</sup> Different studies note that the majority (61%) of mothers are <25 years old, 28% of mothers aged 25-35 years and 11% of mothers were > 35 years old during their pregnancy.<sup>16</sup> In table 8, 39% of mothers were <25 years old and the remaining 12% were > 35 years old.

At the age of <25 years, blood circulation to the cervix and uterus is still not perfect, so that the distribution of oxygen, nutrition, and hormones to the fetus is reduced.<sup>28</sup> At the age of > 35 years, there is an increase in various risk factors. It is believed that the older the mother's age, the more uterine arteries degenerate. This triggers an imbalance of the nitric oxide pathway and oxidative stress that disrupts endothelial function, thereby worsening the uteroplacental circulation.<sup>18</sup>

### **Distribution of mothers based on parity**

From table 9, it was found that the majority (54%) of the patients' mothers were nulliparous. Previous research recorded mothers with 0 parity of 3.56%, parity 1 of 3.40%, and parity of  $\geq 2$  of 4.93%.<sup>3</sup>

According to Rovas et al., Nulliparous women are more at risk because of smaller uterine size and less vascularization than multiparous mothers.<sup>6</sup> In addition, estradiol levels in nulliparous mothers are higher than for multiparous mothers, thus disrupting vascularization to the fetus contained.<sup>6</sup> Whereas in multiparous mothers, there is an increased risk of the incidence of vascular system disorders.<sup>3</sup>

### **Distribution of mothers based on pre-pregnancy body mass index**

Table 10 in the results above shows the results of research that are in accordance with the previous one that the group of women with BMI less than 2.34%, normal BMI of 59.04%,

excess BMI 25.37% and obesity BMI of 13.24%.<sup>26</sup>

The body mass index before pregnancy is useful for determining the nutritional status of the mother and fetus. The results of this study were adjusted to the recommendations for weight gain according to IOM.<sup>11</sup> Based on these recommendations, 60% of mothers had recommended weight gain and 40% did not comply with recommendations, presented in table 11. Nutritional intake that is not in accordance with recommendations can affect nutritional intake in the fetus it contains. One of them has an impact on low birth weight.<sup>23</sup>

#### **Distribution of mothers based on consanguinity history**

In table 12, of 83 subjects no patient had a history of consanguinity in his family. The results of this study are in accordance with previous studies showing data from 40 subjects, none of whom had a family history of consanguinity.<sup>30</sup>

Consanguinity history increases homozygous frequencies in the offspring, leading to the occurrence of recessive alleles.<sup>31</sup> However, in this study there were no parents of patients who had a consanguinity history.

#### **Distribution of mothers based on history of disease before and / or during pregnancy (hypertension or diabetes mellitus)**

Table 13 shows that as many as 5 mothers suffered from hypertension and 1 mother suffering from diabetes mellitus, the remaining 103 mothers had no history of hypertension or diabetes mellitus before and or during their pregnancy. Previous research showed that of a total of 129 subjects, 15 mothers had hypertension and 7 mothers had diabetes mellitus.<sup>24</sup>

Hypertension during pregnancy causes a decrease in uteroplacental blood flow, produces hydroxyl radicals that are toxic to endothelial cell membranes.<sup>10</sup> The diabetes mellitus that occurs during pregnancy triggers oxidative stress reactions that increase capillary permeability and the formation of

reactive oxygen species (ROS), causing impacting endothelial dysfunction in decreasing the uteroplacental circulation.<sup>12</sup>

#### **Distribution of mothers based on history of exposure to teratogenic agents (cigarettes, alcohol, drugs)**

In table 14 as the results above, in accordance with previous studies which showed that as many as 33 people had never been exposed to cigarettes and 40 others had been exposed to cigarettes.<sup>32</sup>

According to Eftekhari et al., Exposure to cigarettes during pregnancy will affect the development of the fetus because, some chemical compounds in cigarette smoke can cross the placental barrier, such as nicotine and carbon monoxide which interfere with blood flow to the fetus.<sup>7</sup>

#### **Distribution of mothers based on work**

Table 15 shows that the majority of mothers work as housewives. Previous research showed that 96.8% of mothers worked as housewives.<sup>24</sup>

Low socioeconomic status influences the purchasing power of food in fulfilling family nutrition.<sup>21</sup>

From the results of this study it was found that the second most work was farmers. Farmer's work is one of the jobs related to EDC exposure (endocrine disrupting chemical). Some examples of EDC include pesticides, herbicides, fungicides, chemical industry products and others. These chemicals are estrogenic and antiandrogenic.<sup>14</sup> According to Fernandez et al., Mothers exposed to EDC during pregnancy are at a 3.5-fold risk of having children with congenital abnormalities of the urogenital system. The existence of a genetic mutation is thought to be the cause.<sup>8</sup>

#### **Distribution of fathers based on cigarette exposure history**

Based on table 16, it was found out of 83 subjects, all of whom said they had been exposed to cigarettes (100%). Previous research shows that fathers exposed to cigarettes are at risk of having children with

hypospadias. This is associated with the presence of germline DNA mutation which is inherited from the offspring, especially through paternal germline.<sup>27</sup>

#### Distribution of fathers based on work

Table 17 shows that most fathers work as farmers. Farmer's work is one of the jobs related to EDC exposure (endocrine disrupting chemical). Fernandez et al., Showed in the results of their study that working fathers exposed to EDC were 2.98 times more likely to have children with congenital abnormalities in the urogenital system.<sup>8</sup>

#### 5. Conclusion

- a. Patient characteristics of congenital abnormalities in the urogenital system include: the age of most patients during surgery is 6-11 years, the proportion of men is more than women, and the majority of patients born with normal weight, normal gestational age and no family history.
- b. The maternal characteristics of congenital abnormalities in the urogenital system include: the highest maternal age is 25-35 years, 0 most parity (nulliparous), normal pre-pregnancy body mass index, no consanguinity history, the majority of mothers do not suffer from the disease before or during pregnancy, the proportion of mothers who have been exposed to cigarettes during their pregnancy is more than those who are not exposed, and most mothers work as housewives.
- c. The father characteristics of patients with congenital abnormalities of the urogenital system include: the majority of fathers have been exposed to cigarettes and the most jobs from fathers are farmers.

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