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Zgodnie z informacją MNiSW z dnia 2 czerwca 2014 r., że w roku 2014 nie będzie przeprowadzana ocena czasopism naukowych; czasopismo o zmienionym tytule otrzymuje tyle samo punktów co na wykazie czasopism naukowych z dnia 31 grudnia 2014 r.

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## FEATURES OF PREGNANCY AND CHILDBIRTH IN WOMEN WITH CONGENITAL MALFORMATIONS OF THE FETUS DEVELOPMENT

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**Key words: pregnancy, childbirth, women, congenital malformations, fetus development.**

### Abstract

There is a very high percentage (39.8%) of childbirth at the age of 30 years old and more.

Pregnant patients with CMF are subjects to complications, including predominating placental dysfunction (46.7%), which manifested itself in the form of fetus's development retardation (26.3%), hypanmion (13.5%) or a combination of fetus's development retardation and hypanmion (6.9 %).

Early preeclampsia (40%), threatened miscarriage (35%), hydramnios (19.03%), preeclampsia (25%), wrong position of the fetus and placenta (20%) are among other complications of pregnancy course.

Parturient women who had fetal birth defects developed complications of childbirth, including a violation of the child's state (fetal distress - 31%), and abnormal contractions (anomalies of labor activity - 18%; premature rupture of the amniotic membranes - 18%).

The high frequency of operative delivery by cesarean section (47%) needs further careful analysis of the indications.

In Ukraine about 10 thousand children with congenital malformations (CMF) born annually. In the structure of infant mortality they consistently are in the second place and constitute up to 0.44-0.47 ‰ [ 1, 2 ]. In this regard, CMF are a serious medical and social problem.

Many researchers believe that pregnancy and childbirth in women with CMF have their own characteristics. Their are publications implied that indicate various gestational complications during pregnancy and childbirth with CMF [ 3, 4, 5 ]. **The objective:** to learn the characteristics of pregnancy and delivery in pregnant women with CMF in Odessa and Odessa region and develop an algorithm of their management at the stage of pregnancy and childbirth.

### Materials and methods

In retrospect 578 birth stories of children with CMF born in Odessa Regional maternity hospital in 2012 - 2014 have been studied. The control group consisted of 100 pregnant women without fetal pathology. Statistical analysis of the materials was made with the use of variation statistics for biology and medicine. The results obtained are processed by mathematical statistics

with the use of Fisher's criterion to assess differences in indicators that are expressed in fractions.

### Results and discussion

Retrospective analysis of CMF structure showed that fetal cardiovascular system disturbances head the list (38.2%), urinary system malformations are next (22.8%) and the musculoskeletal system disorders are the third (10.2%) (Table 1).

Malformations of cardiovascular system since 2013 have tended to increase (43.8%,  $p < 0.05$ ) and do not tend to decrease in 2014 (39.4%). Birth defects of locomotor and urinary systems had almost the same values for the three years under analysis. Among other birth defects of the fetus the increase in multiple defects in 2014 compared to the previous years (12.8%,  $p < 0.05$ ) is noteworthy.

Table 1.

#### STRUCTURE OF CONGENITAL MALFORMATIONS IN THE ODESSA REGIONAL MATERNITY HOSPITAL IN 2012-2014 ( absolute number, %)

Clinical entity	YEARS OF OBSERVATION			
	2012	2013	2014	Total
Congenital malformations	174	224	180	578
CMF of the central nervous system	8 4.6	11 4.9	8 4.4	27 6.06
CMF of the face and neck	8 4.6	15 6.7	6 3.3	43 4.6
CMF of cardiovascular system	56 32.2	98 43.8*	71 39.4	360 38.3
CMF of the digestive system	21 12.1	15 6.7	11 6.1	77 3.2
CMF of the urinary system	44 25.3	46 20.5	40 22.2	214 22.8
CMF of the locomotor system	19 10.9	17 7.6	19 10.6	96 10.2
Multiple malformations	10 5.7	13 5.8	23 12.8	66 7.0
Down's syndrome	8 4.6	10 4.5	2 1.1	27 2.9
Hermaphroditism	0	0	0	1/0.1

*statistically-valid difference between clinical entities of CMF*

Analysis of CMF dependence on maternal age (Table 2) showed that in 58.8% of cases the childbirths took place at the age 18 - 30 years old. But at the same time, there is a very high percentage (39.8%) of the childbirths at the age over 30 years old.

Table 2

PREGNANT WOMEN AGE WITH THE CONGENITAL MALFORMATIONS OF FETUS

Years of observation		2012	2013	2014	Total
Till 18 y.o.	Abs.	3	3	2	8
	%	1.8	1.3	1.1	1.4
19-29 y.o.	Abs.	109	131	100	340
	%	62.6	58.5	55.6	58.8
Over 30 y.o.	Abs.	62	90	78	230
	%	35.6	40.2	43.3	39.8
Total		174	224	180	578

Analysis of CMF dependence on the number of childbirths showed that at the first and second births the number of CMF was the same. At the third and the following births CMF frequency decreases (24%,  $p < 0.05$ ) but during 2012-2014 it has a tendency to increase ( $p < 0.05$ ; Table 3).

Table 3.

DEPENDENCE OF CONGENITAL MALFORMATIONS OF FETUS ON THE NUMBER OF CHILDBIRTHS

Years of observation		2012	2013	2014	Total
1 <sup>st</sup> childbirth	Abs	72	87	62	221
	%	41	39	34	38
2 <sup>nd</sup> childbirth	Abs	69	86	65	220
	%	40	38	36	38
3 <sup>rd</sup> and the following childbirth	Abs	33	51	53	137
	%	19	23	29**	24*
Total		174	224	180	578

\* - Statistically significant difference between the number of births

\*\* - Statistically significant difference by years

Pregnancy with birth defects of the fetus has more complications (Table 4) and placental dysfunction is presented more often (46.7%). Histological studies have shown that the development of fetal vasculature is disturbed, significant involutinal and degenerative changes, necrosis, sclerosis and angiomatosis of decidual membrane take place in placenta.

Table 4

## THE INCIDENCE OF PREGNANCY COMPLICATIONS

Obstetric complications		Groups of examined pregnant			
		Control		Pregnant with CMF	
		100		578	
Threatened miscarriage		7 7%		203 35%*	
Early gestosis		15 15%		231 40%*	
Hydramnion		2 2%		110 19.03%*	
Placental dysfunction	Fetus develop. retardation (1)	3 3%	7 7%	152 26.3%*	270 46.7%*
	Hypamnion (2)	3 3%		78 13.5%*	
	Combination of 1 and 2	1 1%		40 6.9%*	
Preeclampsia		13 13%		144 25%*	
Wrong position and presentation		5 5%		115 20%*	

- statistically significant difference

During pregnancy with fetal birth defects hydramnion takes place at 19.03% of cases ( $p < 0.05$ ) and hypamnion was observed at 13.5% of patients ( $p < 0.05$ ). The wrong position and fetal presentation took place at 20% of cases ( $p < 0.05$ ).

Almost a third (29.76%,  $p < 0.05$ ) of all infants born with birth defects of the fetus had intrauterine growth retardation, one-fifth of preterm birth (16%;  $p < 0.05$ ).

Childbirth in pregnant women with fetal birth defects proceed with more complications (Table 5). Among them are premature rupture of the amniotic membranes (18%;  $p < 0.05$ ), anomalies of labor activity (18%;  $p < 0.05$ ), fetal distress (31%;  $p < 0.05$ ) and come to an end with operative delivery (47%;  $p < 0.05$ ). Fetal distress during labor and weak labor activity, which was not subjected to pharmacological therapy were the main indications for operative delivery.

Table 5.

**THE FREQUENCY OF COMPLICATIONS IN CHILDBIRTH**

Complications at births	Groups of the pregnant examined	
	Control	Pregnant wit CMF
	100	578
Premature births	7 7%	95 16%*
Premature rupture of the amniotic membrane	6 6%	104 18%*
Anomalies of labour activity	7 7%	104 18%*
Fetus's distress	3 3%	179 31%*
Cesarean section	6 6%	272 47%*

*- statistically significant difference*

### **Conclusions**

1. There is a very high percentage (39.8%) of childbirth at the age of 30 years old and more.

2. Pregnant patients with CMF are subjects to complications, including predominating placental dysfunction (46.7%), which manifested itself in the form of fetus's development retardation (26.3%), hypamnion (13.5%) or a combination of fetus's development retardation and hypamnion (6.9 %).

3. Early preeclampsia (40%), threatened miscarriage (35%), hydramnios (19.03%), preeclampsia (25%), wrong position of the fetus and placenta (20%) are among other complications of pregnancy course.

4. Parturient women who had fetal birth defects developed complications of childbirth, including a violation of the child's state (fetal distress - 31%), and abnormal contractions (anomalies of labor activity - 18%; premature rupture of the amniotic membranes - 18%).

5. The high frequency of operative delivery by cesarean section (47%) needs further careful analysis of the indications.

### **Prospects for further research**

The results obtained require further study to develop and implement in practice the tactics of pregnancy and delivery management in pregnant women with fetal birth defects.

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