## THE DOWN SYNDROME, TETRALOGY OF FALLOT AND THE **LEFT-TO-RIGHT SHUNT**

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statistics, Abstract: The cardiac malformations are frequently seen at children with chromosomal disorders. The cardiac percentage of the cases with the Down syndrome out of the lot of study represents 8,2%. In the lot of study we also introduced 6 cases (5,5%) presenting tetralogy of Fallot. The herein paper embodies malformations descriptive statistics results measured for each of the variables.

> Rezumat: Malformațiile cardiace sunt frecvent întâlnite la copiii cu aberații cromozomiale. Procentul cazurilor cu sindrom Down din lotul de studiu reprezintă 8,2%. În lotul de studiu am introdus și 6 cazuri (5,5%) cu Tetralogie Fallot. Această lucrare conține rezultatele de statistică descriptivă obținute pentru fiecare variabilă în parte.

## **Descriptive statistics**

malformații cardiace

Keywords:

genetics,

Cuvinte

statistică.

This part embodies descriptive statistics results measured for each of the variables. The bivariat relationships are studied using tables of association, grouped bar diagrams.

Table no. 1	. Descriptive statistics for the variables: sex,
hackground	, weight curve, age

cheie:

genetică,

Variable	Ν	%
Sex		
Masculine	54	49.1
Feminine	56	50.9
Background		
Urban	58	52.7
Rural	52	47.3
Weight		
Normal	<b>6</b> 5	59.1
In stagnation	45	40.9
Age		
Average ( SD )		2.6(3.8)

The data basis consists of approximately an equal number of women (49%) and men (51%), the persons coming from the urban environment (52,7%) being more numerous than the ones having a rural background (47,3%). In 66% of the cases the age of the children is under 1 year; approximately 6% between 1 and 2, and the rest are children over 2 years.

During the study 59,1% of the children maintained a normal body weight while 40,9% of them presented a loss or stagnation of weight.

The cardiac malformations are frequently seen at children with chromosomal disorders. The main chromosomal disorders present in the lot of study were Down Syndrome trisomies (9 cases), are associated as cardiac malformations with

left-to-right shunt: DSA-OS + DSV-P, CAV, CAV+PCA, DSA-OP+DSV-P+PCA, DSA-OS, DSV-P.





Out of the 9 cases with Down syndrome 2 of them (22,2%) closed naturally, in the rest of the cases, 7 (77,8%), the closure was performed by surgery in 3 cases (33,3%) which represents 10,3% of the total of cases subject to surgery within the lot of study, the other 4 being monitored at present, the further evolution directing the case towards the type of therapy.

The percentage of the cases with Down syndrome within the lot of study represents 8,2% of the total number of cases. In the lot of study, the karyotype was performed in Sibiu at the genetics laboratory, and the type of trisomy presented as a result was of trisomy 21=100%. The 21 trisomy frequently associated malformative cardiopathy: atrioventricular canal (AVC), interventricular septal defect (VSD), interatrial septal defect (ASD), or associations between these defects.

AMT, vol II, no. 3, 2010, p. 227

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Article received on 21.04.2010 and accepted for publication on 10.05.2010

ACTA MEDICA TRANSILVANICA September 2010; 2(3)227-229

Table no. 2. Table of association for the Down syndrome's variables and the self closure of the defects

representing 16,7% of the cases with tetralogy of Fallot and 9% of the total number of cases subject to the study.

			inchis singur		
			0	inchis	Total
sd. down	0	Count	56	45	101
		% within sd. down	55.4%	44.6%	100.0%
		% within inchis singur	88.9%	95.7%	91.8%
		% of Total	50.9%	40.9%	91.8%
	1	Count	7	2	9
		% within sd. down	77.8%	22.2%	100.0%
		% within inchis singur	11.1%	4.3%	8.2%
		% of Total	6.4%	1.8%	8.2%
Total		Count	63	47	110
		% within sd. down	57.3%	42.7%	100.0%
		% within inchis singur	100.0%	100.0%	100.0%
		% of Total	57.3%	42.7%	100.0%

 Table no. 3. Table of association for the Down syndrome's variables and the surgical closure of the defects

			operat		
			0	operat	Total
sd. down	0	Count	75	26	101
		% within sd. down	74.3%	25.7%	100.0%
		% within operat	92.6%	89.7%	91.8%
		% of Total	68.2%	23.6%	91.8%
	1	Count	6	3	9
		% within sd. down	66.7%	33.3%	100.0%
		% within operat	7.4%	10.3%	8.2%
		% of Total	5.5%	2.7%	8.2%
Total		Count	81	29	110
		% within sd. down	73.6%	26.4%	100.0%
		% within operat	100.0%	100.0%	100.0%
		% of Total	73.6%	26.4%	100.0%

The tetralogy of Fallot associates, from a historical point of view, an interventricular communication, a pulmonary stenosis, dextroposition with aorta dilatation and right ventricular hypertrophy. In fact the only important ones are the interventricular communication and the pulmonary stenosis, the other two being the consequences of the first. The tetralogy of Fallot is one of the cardiac malformations frequently associated with extracardiac anomalies.

We introduced 6 cases (5,5%) in the lot of study, and none of them presented a self closure of the shunt from the interventricular communication level which confirms the fact that the malformation is complex and the hemodynamics of these malformations does not allow its closure.

Tabele no. 4. Table of association for the tetralogy of Fallot's variables and the self closure of the defects

			inchis	singur	
			0	inchis	Total
t4f	0	Count	57	47	104
		% within t4f	54.8%	45.2%	100.0%
		% within inchis singur	90.5%	100.0%	94.5%
		% of Total	51.8%	42.7%	94.5%
	1	Count	6		6
		% within t4f	100.0%		100.0%
		% within inchis singur	9.5%		5.5%
		% of Total	5.5%		5.5%
Total		Count	63	47	110
		% within t4f	57.3%	42.7%	100.0%
		% within inchis singur	100.0%	100.0%	100.0%
		% of Total	57.3%	42.7%	100.0%

There were 4 cases resolved by surgical means, namely 13,8% of the total number of children subject to surgery from the lot of study, with left-to-right shunt.

As the study shows, there was only one case of death and that belonging to the tatralogy of Fallot's group,

Table no. 5. Table of association for	the tetralogy of Fallot's
variables and cases of death	

			operat		
			0	operat	Total
t4f	0	Count	79	25	104
		% within t4f	76.0%	24.0%	100.0%
		% within operat	97.5%	86.2%	94.5%
		% of Total	71.8%	22.7%	94.5%
	1	Count	2	4	6
		% within t4f	33.3%	66.7%	100.0%
		% within operat	2.5%	13.8%	5.5%
		% of Total	1.8%	3.6%	5.5%
Total		Count	81	29	110
		% within t4f	73.6%	26.4%	100.0%
		% within operat	100.0%	100.0%	100.0%
		% of Total	73.6%	26.4%	100.0%

Table no. 6. Table of association for the tetralogy of Fallot's variables and cases of death

			dece	edat	
			nu	da	Total
t4f	0	Count	104		104
		% within t4f	100.0%		100.0%
		% within decedat	95.4%		94.5%
		% of Total	94.5%		94.5%
	1	Count	5	1	6
		% within t4f	83.3%	16.7%	100.0%
		% within decedat	4.6%	100.0%	5.5%
		% of Total	4.5%	.9%	5.5%
Total		Count	109	1	110
		% within t4f	99.1%	.9%	100.0%
		% within decedat	100.0%	100.0%	100.0%
		% of Total	99.1%	.9%	100.0%

Table	no. '	7 a,b.	Table	of a	ssociatio	on bet	ween	the	variables	<b>;</b> –
Down	sync	lrome	and to	etral	logy of F	allot -	- and	the	evolution	

			t4f		
			0	1	Total
evolutie	favorabila	Count	64		64
		% within evolutie	100,0%		100,0%
		% within t4f	61,5%		58,2%
		% of Total	58,2%		58,2%
	nefavorabila	Count	40	6	46
		% within evolutie	87,0%	13,0%	100,0%
		% within t4f	38,5%	100,0%	41,8%
		% of Total	36,4%	5,5%	41,8%
Total		Count	104	6	110
		% within evolutie	94,5%	5,5%	100,0%
		% within t4f	100,0%	100,0%	100,0%
		% of Total	94,5%	5,5%	100,0%
			sd. c	lown	
				iown 1	Total
evolutie	favorabila	Count	sd. c 0 63	lown 1 1	Total 64
evolutie	favorabila	Count % within evolutie	sd.c 0 63 98,4%	lown 1 1,6%	Total 64 100,0%
evolutie	favorabila	Count % within evolutie % within sd. down	sd. c 0 63 98,4% 62,4%	lown 1 1,6% 11,1%	Total 64 100,0% 58,2%
evolutie	favorabila	Count % within evolutie % within sd. down % of Total	sd. c 0 63 98,4% 62,4% 57,3%	lown 1 1,6% 11,1% ,9%	Total 64 100,0% 58,2% 58,2%
evolutie	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count	sd. c 0 98,4% 62,4% 57,3% 38	lown 1 1,6% 11,1% ,9% 8	Total 64 100,0% 58,2% 58,2% 46
evolutie	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie	sd. c 0 98,4% 62,4% 57,3% 38 82,6%	lown 1 1,6% 11,1% ,9% 8 17,4%	Total 64 100,0% 58,2% 58,2% 46 100,0%
evolutie	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down	<u>sd. c</u> 0 98,4% 62,4% 57,3% 38 82,6% 37,6%	lown 1 1,6% 11,1% ,9% 8 17,4% 88,9%	Total 64 100,0% 58,2% 58,2% 46 100,0% 41,8%
evolutie	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down % of Total	0 63 98,4% 62,4% 57,3% 38 82,6% 37,6% 34,5%	lown 1 1,6% 11,1% ,9% 8 17,4% 88,9% 7,3%	Total 64 100,0% 58,2% 58,2% 46 100,0% 41,8% 41,8%
evolutie	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down % of Total Count	<u>sd. c</u> 0 63 98,4% 62,4% 57,3% 38 82,6% 37,6% 34,5% 101	lown 1 1,6% 11,1% ,9% 8 17,4% 88,9% 7,3% 9	Total 64 100,0% 58,2% 68,2% 46 100,0% 41,8% 41,8% 110
evolutie Total	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down % of Total Count % within evolutie	<u>sd. c</u> 0 98,4% 62,4% 57,3% 38 82,6% 37,6% 34,5% 101 91,8%	lown 1 1,6% 11,1% ,9% 8 17,4% 88,9% 7,3% 9 8,2%	Total 64 100,0% 58,2% 58,2% 46 100,0% 41,8% 41,8% 110 100,0%
evolutie Total	favorabila nefavorabila	Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down % of Total Count % within evolutie % within sd. down	sd.c 0 63 98,4% 62,4% 57,3% 38 82,6% 37,6% 34,5% 101 91,8% 100,0%	lown 1 1,6% 11,1% ,9% 8 17,4% 88,9% 7,3% 9 8,2% 100,0%	Total 64 100,0% 58,2% 46 100,0% 41,8% 41,8% 110 100,0% 100,0%

In what concerns the Down syndrome cases,

the evolution was favorable in 11,1% of cases and not favorable in 88,9% of cases.

D. In these groups of study the evolution was different because of the more complex malformations with shunt and no 3 2010 p 228

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associated chromosomal disorder (Down syndrome).

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