

معدل انتشار التشوهات الولادية عند الولادة في الهيئة العامة لمستشفى دار التوليد الجامعي بدمشق خلال أربع سنوات من الأزمة السورية

ندى بشار*

بشار الكردي**

الملخص

المقدمة: تحدث التشوهات الولادية أنماطاً مختلفة من الاضطرابات البنيوية أو الوظيفية أو الاستقلابية، وتُشاهد في 6% من الولادات. تهدف هذه الدراسة إلى تحديد معدل انتشار هذه التشوهات في الهيئة. الطرائق: دراسة وصفية مقطعية راجعة، أجريت في الهيئة العامة لمستشفى التوليد الجامعي بدمشق ما بين كانون الثاني 2012 وحريران 2016. وأجريت الحسابات الإحصائية باستخدام برنامج SPSS 17.0. النتائج: فُجد أن معدل انتشار التشوهات عند الولادة وصل إلى نحو 1.61 بالألف، توزعت على 83 حالة من أصل 51433 ولادة حية. كان معدل انتشار تشوهات الأنبوب العصبي 0.58 بالألف، وتشوهات الشفة و/أو قبة الحنك 0.15 بالألف وكذلك الهيكلية، أما تشوهات الأعضاء التناسلية فبلغت نحو 0.09 بالألف، والتشوهات الصبغية - 0.03 بالألف، وتوزعت 0.58 بالألف على غيرها من التشوهات. وكانت أوزان 43.37% من الولادة طبيعية، في حين عانى 25.30% منها من نقص في الوزن، و1.2% من نقص شديد، ومثلت الإناث 53.75% منها. الاستنتاجات: معدلات انتشار التشوهات تقارب مثيلاتها في البلدان المتقدمة، دالة على عدم تراجع نظام الرعاية الصحية المتبع لدينا على الرغم من الأزمة. كلمات مفتاحية: التشوهات الولادية، تشوهات الأنبوب العصبي، شقوق الشفة و/أو قبة الحنك، سوريا.

* أستاذ مساعد - طب أسنان الأطفال كلية طب الأسنان - جامعة دمشق.

** أستاذ - قسم التوليد وأمراض النساء - كلية الطب البشري - جامعة دمشق.

Newborns Birth Defects Prevalence Rate at the General Authority of Obstetrics and Gynecology Hospital of Damascus University During Four Years of Syrian Crisis

Nada Bshara*

Bashar Al-Kurdi**

Abstract

Background: Birth defect is an abnormality of either structural, functional or metabolic manner, which occurs in 6% of annual births. **Aims and Objectives:** Determine the prevalence rate of birth defects among delivered babies in a hospital bases. **Subjects and Methods:** A descriptive, cross-sectional study. At the General Authority of Obstetrics and Gynecology Hospital, Damascus University. By taking a retrospective, look into hospitals' medical archive (January 2012 - June 2016). **Results:** Birth defects prevalence rate estimated 1.61 per 1000, with 83 cases out of 51433 live births. Neural tube defects 0.58/1000; clef lip and/or palate 0.15/1000; congenital malformation of genital organs 0.09/1000; congenital malformation and deformation of musculoskeletal system 0.15/1000; chromosomal abnormalities 0.03/1000; other congenital malformation 0.58/1000. Birth weight was significantly normal with 43.37%, low birth weight 25.30% and extremely low weight 1.20%. Females made 53.75% of all cases. **Conclusion:** The results shows a development in the medical care of obstetrics and gynecology, despite the hard times the country is going through for a while.

Key Words: Birth Defects; Congenital malformation; Neural tube defects; Clef lip and/or palate; Syria.

* Ass.Prof. Dep. of Pediatric Dentistry, School of Dentistry, Damascus University.

** Prof. Dep. of Obstetrics and Gynecology, Medical Faculty, Damascus University.

Introduction:

Birth defects occur regularly in newborns, causing great concerns to parents and a huge challenge to the health care system. Defects incidence rate indicates the number of new cases occurring in a particular period. Thus, the interested authorities can determine the causes, make early diagnosis and take preventive measures leading to a better life style. There was no study representing the rates of birth defects in the past few years, especially in the Syrian crisis period. This study aims to demonstrate the observed alive birth defects at the General Authority of Obstetrics and Gynecology Hospital of Damascus University from January 2012 until June 2016, putting a bedrock for a bigger research in the near future.

Background:

Birth defect is an abnormality of either structural, functional or metabolic manner, occurring during pregnancy and leading to live obstructions in newborns.¹

Each year millions of infants are given birth worldwide, proximally 6% of them are affected with various types of birth defect (7.9 million annually). Critical defects can be lethal, while others may influence infants' state for life. The middle and low-income countries share the greatest amount of those defects, but 95% of them die every year due to the lack of well designed care programs, which results in a lower incident of living ones comparing to the developed countries².

On account of the lack of diagnostic tools and material resources. As well as, the absence of reliable records and data. Birth defects need enormous efforts to give the right prevalence rate in the developing world³.

A birth defect is an abnormality that affects any body structure or function, and exists since birth. It may be clinically obvious at birth, or it might be diagnosed only later in life². This article is demonstrating the clinically obvious defects from birth.

The most recorded child birth abnormalities are: congenital heart defects (13%); neural tube defects (4.1%); the hemoglobin disorders, thalassemia and sickle cell disease (3.9%); Down syndrome (2.7%); and glucose-6-phosphate dehydrogenase (G6PD) deficiency (2.3%)².

Due to the preventive measures and early treatment of those defects in the developed countries, millions of lives were saved and improved. However, developing countries has not shown the same results. Hundreds of strategies have been developed to take care and prevent states worsening. Some of them include pediatric corrective surgery for structural birth defects such as cleft lip and palate, congenital heart defects,

congenital cataracts and clubfoot. Whereas other problems might be treated using medications, physical rehabilitation and maternal life style during pregnancy².

Looking back to find any information about the prevalence of birth defects in Syria, nothing has been puzzled out, except of a study about the diagnosis and management of neural tube defect in early pregnancy. Within which the authors mentioned that the incidences of birth defects between (1997-1999) reached 229 cases, out of which 135 suffered of neural tube defects⁴.

This article aims to give life birth prevalence rate at the General Authority of Obstetrics and Gynecology Hospital of Damascus University between January 2012 and June 2016.

The General Authority of Obstetrics and Gynecology Hospital of Damascus University is the major hospital of obstetrics and gynecology in Syria that administrates thousands of medical services for women each year, especially the critical ones. This hospital is located in Damascus, making most of its attendants from the Syrian south. Despite that, it still hosts most of the critical situations through the Syrian geography.

Methodology:

A descriptive, cross-sectional study. That had taken place at the General Authority of Obstetrics and Gynecology Hospital of Damascus University, hospital-based. To recognize the incidences of births defects between January 2012 and June 2016 a retrospective study was done by looking back into hospitals' medical archive recorded by pediatric residents and supervisors in that period. The cases of clinically obvious life births with defects had been labeled. In addition to newborns gender and birth weight.

Using the ICD-10, the defects had been classified into six major groups⁵:

- 1-Neural tube defects (Q00-Q07)
- 2-Lip cleft , palate cleft (Q35-Q37)
- 3-Congenital malformation of genital organs (Q50-Q56)
- 4-Congenital malformation and deformation of musculoskeletal system (Q65-Q79)
- 5-Other congenital malformation (Q80-89)
- 6-Congenital malformation of genital organs (Q50-Q56)

Birth weight had been classified into five groups⁶:

- 1-Extremely low birth weight < 1000g
- 2-Very low birth weight < 1500g
- 3-Low birth weight < 2500 g

4-Normal birth weight

5-High birth weight > 4000g

For statistics, SPSS Statistics 17.0 software had been used.

Results:

A total 51433 alive neonates were born at the General Authority of Obstetrics and Gynecology Hospital of Damascus University between January 2012 and June 2016. Eighty-three of the newborns suffered of a birth defect, with an prevalence rate of 1.61/1000.

Thirty neonates were diagnosed with neural tube defects (36.1%; prevalence rate 0.58/1000) live births. Meningocele made sixteen of them, three had hydrocephalous; the combined episodes of meningocele and hydrocephalous were five cases, and six were born with acephalism. Combined neural defects with other defects were classified as other congenital malformations.

The quantity of congenital malformation and deformation of musculoskeletal system summed eight births (9.6%; with a prevalence rate of 0.15/1000). Cleft lip, and/or cleft palate were seen in eight births (9.6%; with a prevalence rate of 0.15/1000). In addition to a patient born with a cleft lip and palate and malformed limbs, who was classified into the other congenital malformation group.

Chromosomal trisomy 21 was recorded only in two infants who were born with a Down syndrome, making (2.4%) of all birth defects (prevalence rate 0.03/1000).

Ambiguous genitalia is a congenital malformation of genital organs that made (6.0%); five of all defects (prevalence rate 0.09/1000).

Other congenital malformation group made (36.1%) of total defects with thirty different conditions (prevalence rate 0.58/1000). (Table 1 and 2)

Females with birth defects made 53.75% of all recorded cases, with 43 newborns. Missing data of gender approached 7.50% with three cases due to the lack of recording (Graph1) .

Birth weight in general was normal. Nevertheless, due to the lack of weight recording by the residents the missing data reached 24.1% with twenty cases. (Graph2 and Table3)

Discussion:

The prevalence rate of birth defect malformation in this study estimated (1.61 in 1000), which is clearly lower than (10.6 in 1000) previously mentioned within Al- kirdi & Al- saqqa study⁴, with (229) cases at the same hospital between (1997-1999). Neural tube defects made 135 of them with an prevalence rate of (6.25) in every 1000 newborns, considerably decreasing to (0.58 in 1000) in this study. These

results might be rooted to the obstetrics and gynecology medical care progression since the beginnings of the second millennium, obligating the use of folic acid supplements and early detecting the anomalies. The technological revolution that invaded the world earlier may has played a role too.

In Washington birth defects (2006-2009)⁷ reported a prevalence of (0.04/1000) for acephalous; (2.02/1000) for cleft lip and/or cleft palate; (0.44/1000) for congenital malformation and deformation of musculoskeletal system⁷. (0.11/1000),(0.15/1000),(0.15/1000) respectively, for this study. Demonstrating a higher number for acephalous, yet a lower one for both cleft lip and/or cleft palate, and congenital malformation and deformation of musculoskeletal system.

In North Dakota¹ the birth defects rate per 1000 live births of central nervous system defects, are as the following: anencephalies (0.25), hydrocephalus without spina bifida (0.77), microcephalus (0.85), and spina bifida without anencephalies (0.57). Whereas, cleft lip with and/or cleft palate (2.07)¹. Those results are higher than the ones mentioned in this study, which might be back to the fact that this study was based in one hospital, while recorded from several places in Dakota.

In South-East Asian region⁸ the birth defects ranged between (54.1/1000) and (64.3/1000). Neural defects made (0.7/1000) in Indonesia, Thailand and Timor-Leste. Yet in India and DPR Korea, it made (4.7/1000).Down syndrome went from (0.8/1000) in PDR Korea, to (2.1/1000) in Bhutan, Nepal and Timor-Leste. The prevalence rate of Down syndrome in this study made (0.03/1000) which might be to either the abortions after early diagnoses of it during pregnancy or difficulties in immediate after birth diagnoses by pediatricians. In addition, it was a hospital-based study and didn't take into considerations other hospitals in the country.

At Patan Hospital, Nepal⁶, birth defects were (8.1 per 1000). (11%) of them with cleft lip and/or cleft palate, musculoskeletal system was affected in 35% of cases. In compare to (9.6%) for each, out of all defects in this study. Birth weight was extremely low in (1.56%), low in (21.87%) and normal in (67.81%). Close to the results of our study, which are (1.20%), (25.30%) and (43.37) respectively.

It has been mentioned that there was no increasing in the risk of developing a child birth defect among US militants serving in the Gulf War (1990-1991)⁹. While on the contrary; it has increased between Iraqis in consequence of uranium use and other environmental factors³.

In Gaza Strip¹⁰ there were significant rise in children born with birth defects rising from (20%) in 1997 up to (52%) in 2010 reminding that “the first documented use of air-delivered weaponry on the Gaza Strip started in 2001, and since then the use of this weaponry has been a major environmental stress”¹⁰. Syria has been going through rough times for five

years now, very similar to those countries. Nevertheless, there was an improvement in the prevalence rate of birth defects in Syria comparing to the world records by all odds of this study.

Conclusions:

The prevalence rate of birth defects in Syria was low and close to the ones in developed regions.

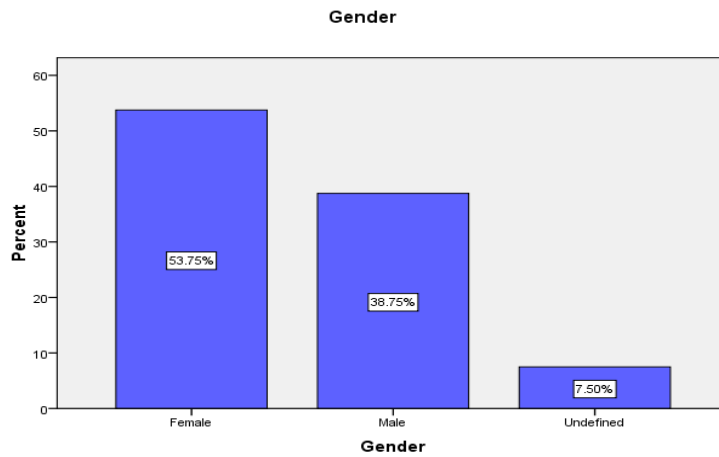
(Table 1) Shows the birth defects frequency distribution according to defects class defects at the General Authority of Obstetrics and Gynecology Hospital of Damascus University from January 2012 until June 2016

Valid Percent	Percent	Frequency	
36.1	36.1	30	Neural Tube Defects (Q00-Q07)
9.6	9.6	8	Clef L/P (Q35-Q37)
6.0	6.0	5	Congenital Malformation Of Genital Organs (Q50-Q56)
9.6	9.6	8	Congenital malformation and deformation of Musculoskeletal System (65-79)
36.1	36.1	30	Other Congenital Malformation (Q80-89)
2.4	2.4	2	Chromosomal abnormalities, Not elsewhere Classified (Q90-Q99)
100.0	100.0	83	Total

(Table 2) Shows the birth defect frequency according to abnormality case defects at the General Authority of Obstetrics and Gynecology Hospital of Damascus University from January 2012 until June 2016

Incidence rate	Percent	Frequency	
0.31/1000	19.3	16	Meningocele
0.05/1000	3.6	3	Hydrocephalous
0.09/1000	6.0	5	Meningocele&Hydrocephalous
0.11/1000	7.2	6	Acephalous
0.09/1000	6.0	5	Ambiguous Genitalia
0.03/1000	2.4	2	Down Syndrome
0.15/1000	9.6	8	Abnormal Limbs
0.15/1000	9.6	8	Cleft Lip&Palate
0.01/1000	1.2	1	Cleft L/P& Abnormal Limbs
0.44/1000	27.7	23	Other Defects
0.01/1000	1.2	1	Umbilical hernia
0.05/1000	3.6	3	Meningocele&Another
0.03/1000	2.4	2	Abnormal Limbs&Neural defects
	100.0	83	Total
1.61/1000			

(Graph1) Shows the gender of newborns with birth defects at the General Authority of Obstetrics and Gynecology Hospital of Damascus University from January 2012 until June 2016



Graph Shows the birth weight frequency of newborns with birth defect defects at the General Authority of Obstetrics and Gynecology Hospital of Damascus University from January 2012 until June 2016

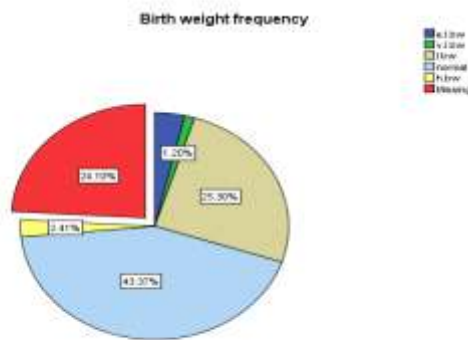


Table 3

Test Statistics	
weight classification	
75.968 ^a	Chi-Square
4	Df
.000	Asymp. Sig.

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 12.6.

المراجع References

1. North Dakota Birth Defects. 2010;(March).
2. Christianson A, Howson CP, Modell B. MARCH OF DIMES. 2006.
3. Al-Hadithi TS, Al-Diwan JK, Saleh AM, Shabila NP. Birth defects in Iraq and the plausibility of environmental exposure: A review. *Confl Health*. 2012;6(1). doi:10.1186/1752-1505-6-3.
4. Al- kirdi B (Dep. OOAGFOM- DU., Al- saqqa K (Dep. OOAGFOM- DU. Diagnosis and Management of Neural Tube Defect in Early Pregnancy. *ISSN 2072-2265*. 2002;18(1):177-190. <http://www.damascusuniversity.edu.sy/mag/health/old/medical/2002/18-1/sakka.pdf>.
5. WHO. *International Statistical Classification of Diseases and Related Health Problems (International Classification of Diseases)(ICD) 10th Revision - Version:2010*. Vol 1.; 2010. <http://apps.who.int/classifications/icd10/browse/2010/en>.
6. Ansari I, Rajbhandari R, Chilise S, et al. Imran Ansari: Congenital malformation at birth Congenital malformations at birth in 7 , 922 consecutive deliveries at Patan Hospital , Nepal. 2014;1(2):4-7.
7. National Center on Birth Defects and Developmental Disabilities C for DC and P. *Major Birth Defects Data from Population-Based Birth Defects Surveillance Programs in the United States , 2006-2010 Updated August 2013 Prepared by the National Center on Birth Defects and Developmental Disabilities , Centers for Disease Control and Preve*. Vol 172.; 2013.
8. WHO S. Birth Defects In South-east Asia A Public Health Challenge. *World Heal Organ Reg Off South-East-Asia*. 2013;SEA-CAH-13:63-70. http://apps.searo.who.int/PDS_DOCS/B4962.pdf.
9. Bukowinski AT, Desciscio C, Conlin AMS, Margaret MA, Sevic CJ, Smith TC. Birth defects in infants born in 1998-2004 to men and women serving in the U.S. military during the 1990-1991 Gulf War era. *Birth Defects Res Part A - Clin Mol Teratol*. 2012;94(9):721-728. doi:10.1002/bdra.23062.
10. Naim A, Minutolo R, Signoriello S, Manduca P. Prevalence of birth defects in the Gaza Strip, occupied Palestinian territory, from 1997 to 2010: a pedigree analysis. *Lancet*. 2013;382:S27. doi:10.1016/S0140-6736(13)62599-4.

تاريخ ورود البحث: 2019/12/06.

تاريخ قبوله للنشر: 2020/02/04.