

Congenital malformations in Elbasan region for the period 2007-2012: Active screening in primary health care settings

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Abstract

Aim: Similar to other regions of Albania, congenital malformations are leading causes of childhood mortality and chronic illness in Elbasan region, too. Nevertheless, to date, the evidence on the magnitude and determinants of congenital malformations for Elbasan region is scarce. The aim of this study was to describe the frequency of congenital malformations for the period 2007-2012, as recorded by the active screening procedures conducted in primary health care services in Elbasan region.

Methods: An active screening for congenital malformations was undertaken by primary health care physicians in the region of Elbasan during 2007-2012. Hence, the information on congenital malformations was extracted from the health records pertinent to primary health care services in Elbasan region. On the other hand, the information about live births and infant deaths was collected from the Albanian Ministry of Health.

Results: Overall, there was evidence of an increase in the rate of birth defects in Elbasan region from 18.4/1000 live births (in 2007) to 21.2/1000 live births (in 2012). However, the trend over time was inconsistent, with the highest peak noticed in 2010 (24.6/1000 live births). As a matter of fact, there was no evidence of a statistically significant linear trend in the increase of birth defects in Elbasan region for the period 2007-2012 (Cox-Stuart test for linear trend: $P=0.25$). On the other hand, there was evidence of a decreasing trend in infant mortality rate in the past few years in Elbasan region. Hence, infant mortality rate declined from 12.3/1000 live births in 2010 to 5.2/1000 live births in 2012.

Conclusions: In Elbasan region, congenital malformations may have a negative health impact similar to the other regions of Albania. Health professionals and policymakers in Elbasan and other regions of Albania should be aware of the means of prevention and treatment of congenital malformations.

Keywords: birth defects, congenital malformations, Elbasan, preterm births.

Introduction

At a global level, it is estimated that more than 20 million infants are diagnosed with congenital malformations (alias birth defects) every year (1). Of these, about eight million experience serious birth defects (1,2). Notwithstanding the continuous efforts to control and promptly treat congenital malformations, more than three million children with congenital malformations will face disabilities for the rest of their lives including different types of mental diseases and physical limitations (1,2). As a matter of fact, birth defects are the leading cause of infant mortality in the United States of America (1,2). The most prevalent congenital malformations worldwide comprise defects of the cardiovascular system, neural tube defects, and the Down syndrome (1,3).

In Albania, the rate of congenital malformations (birth defects) was 14.0 per 1000 live births in 2010. In Tirana, the rate of congenital malformations for the years 2009 and 2010 was 23.7 and 24.1 per 1000 live births, respectively (2). In 2010, the most prevalent birth defects in Albania were conditions affecting the cardiovascular system, the musculoskeletal system and the digestive system (2,4).

Similar to other regions of Albania, congenital malformations are leading causes of childhood mortality and chronic illness in Elbasan region, too. Nevertheless, to date, the evidence on the magnitude and determinants of congenital malformations for Elbasan region is scarce.

In this context, the aim of our study was to describe the frequency of congenital malformations

for the period 2007-2012, as recorded by the active screening procedures conducted in primary health care services in Elbasan region.

Methods

This was a cross-sectional study. An active screening for congenital malformations (alias birth defects) was undertaken by primary health care physicians in the region of Elbasan during 2007-2012. Hence, the information on congenital malformations was extracted from the health records pertinent to primary health care services in Elbasan region. On the other hand, the information about live births and infant deaths was collected from the Albanian Ministry of Health. Based on this information, available from the Ministry of Health, the infant mortality rate (per 1000 live births) was calculated for Elbasan region. Cox-Stuart test was used to assess the linear trend in the increase of birth defects in Elbasan region for the period 2007-2012. A p-value of ≤ 0.05 was regarded as statistically significant. Statistical Package for Social Sciences (SPSS, version 15.0) was used for all the statistical analyses.

Results

Table 1 presents the distribution of birth defects in Elbasan region for the period 2007-2012, according to the active screening procedures conducted by family physicians. Overall, there was evidence of an increase in the rate of birth defects in Elbasan region from 18.4/1000 live births (in 2007) to 21.2/1000 live births (in 2012).

Table 1. Birth defects in Elbasan region for the period 2007-2012: Active screening in primary health care settings

Year	Number of birth defects	Number of live births	Birth defects/1000 live births
2007	40	2172	18.4
2008	42	2115	19.8
2009	39	2228	17.5
2010	56	2276	24.6
2011	54	2224	24.3
2012	49	2306	21.2

However, the trend over time was inconsistent (Figure 1), with the highest peak noticed in 2010 (24.6/1000 live births). As a matter of fact, there was no evidence of a statistically significant linear trend in the increase of birth defects in Elbasan region for the period 2007-2012 (Cox-Stuart test

for linear trend: $P=0.25$).

On the other hand, there was evidence of a decreasing trend in infant mortality rate in the past few years in Elbasan region (Table 2). Hence, infant mortality rate declined from 12.3/1000 live births in 2010 to 5.2/1000 live births in 2012 (Table 2).

Figure 1. Trend of birth defects in Elbasan region for the period 2007-2012: Active screening in primary health care settings

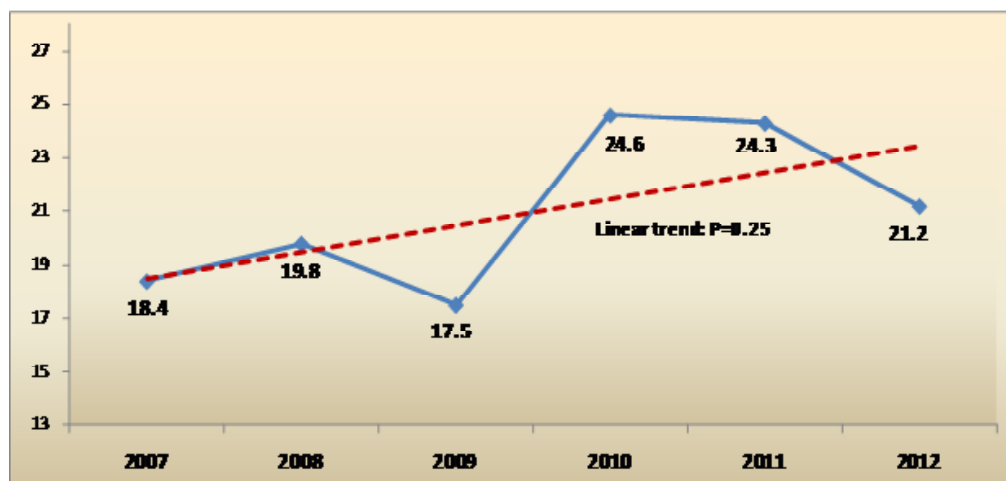


Table 2. Infant mortality in Elbasan region during 2010-2012
(Source: Albanian Ministry of Health)

Year	Number of live births	Number of infant deaths	Infant mortality rate (per 1000 live births)
2010	2276	28	12.3
2011	2224	17	7.6
2012	2306	12	5.2

Discussion

This analysis was based on secondary data extracted from the active screening on congenital malformations (birth defects) performed by primary health care physicians in the region of Elbasan during the period 2007-2012. Main findings of this study include a non-statistically significant increase in the rate of birth defects in Elbasan region for the period 2007-2012. It should be noted that the trend over time was rather inconsistent in Elbasan region, with an increase during the first period (2007-2010), which was followed by a slight decrease in 2011, but a much more pronounced

decline in 2012. Conversely, similar to most of the other regions of Albania, infant mortality rate has declined consistently in Elbasan region in the past few years.

It would be interesting to compare the findings from our analysis with the data extracted from the national surveillance system on congenital malformations which was established in the past few years in Albania (2,4).

According to a recent report, the prevalence of congenital malformations in Albania was 14.3 per 1000 live births in 2012 (2,5). This reported rate

of birth defects in Albania seems lower than the rates reported by the Global Report on Birth Defects in 2006 (52.9 per 1000 live births) (1). However, there is need for robust investigation regarding the prevalence and determinants of congenital malformations (6,7) in order to compare estimates from Albania with those reported in the international literature. From this point of view, for the sake of international comparability, the congenital malformations surveillance system in Albania should be expanded including birth defects among stillbirths and terminated pregnancies, as well as employment of an active case finding surveillance systems (8). In addition, the national surveillance system of birth defects in Albania should involve both hospital and primary health care facilities in order to provide a comprehensive assessment of the prevalence of birth defects (9). Congenital malformations are a significant public health problem given the relatively high prevalence and the resulting disabilities and functional limitations for the affected individuals (10). Based on the

available information on the magnitude of congenital malformations in Elbasan and other regions of Albania, appropriate public health programs and medical interventions should be designed and implemented.

Hence, congenital malformations may have a negative health impact in Elbasan region, similar to the situation observed in the other regions of Albania. Future studies should compare the findings of current analysis based on the data from active screening conducted in primary health care settings with the information pertinent to the national surveillance system on congenital malformations which is hosted at the national institute of public health in Tirana. Furthermore, future analyses should compare the rate of congenital malformations in Elbasan region vis-à-vis other regions of Albania.

In conclusion, health professionals and policymakers in Elbasan region, as well as in the other regions of Albania should be aware of the means of prevention and treatment of congenital malformations.

Conflicts of interest: None declared.

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