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Data Article

Statistical data analysis of the risk factors of Neonatal Congenital Hypothyroidism in Khuzestan Province, Iran

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ABSTRACT

This article contains data on the effective factors on congenital hypothyroidism (CH) that was learned from a case-control study designed in Khuzestan province in Iran. The data set of this article provides information on newborn descriptive features and effective factors on Neonatal Congenital Hypothyroidism that occurs in Khuzestan Province, Iran.

Congenital Hypothyroidism is one of the most important causes of preventable mental retardation in infants, "Prevention of intellectual disability through screening for congenital hypothyroidism: how much and at what level? Archives of disease in childhood" (Grosse and Van Vliet, 2011) [1]. The prevalence of this disorder in Iran is higher than the global average, "Epidemiology of congenital hypothyroidism in Markazi Province, Iran" (Dorreh et al., 2014) [2]. The related case-control study was on the identification of effective factors on congenital hypothyroidism (CH) that designed in Khuzestan province in Iran. The understudy variables were neonatal TSH level (mu/L), birth weight (gr), age (day), to being twins, sex, parental Consanguinity, and mothers' age.

The understudy population was infants, who were under-covered by the national screening program in Khuzestan province. 183 cases and 192 controls were selected during this study. There was the significant association between Female gender [OR = 1.9(1.1–3.1)]

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and Twinning [OR = 4(1.8–9.7)] with CH. According to multivariate analysis results, the Relationship between Consanguinity and CH was not statistically significant [OR = 1.2 (0.7–1.8)].

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Specifications table

| | |
|----------------------------|---|
| Subject area | Medical sciences |
| More specific subject area | Neonatal health, Public health |
| Type of data | Tables and figures. |
| How data was acquired | The needed information about cases and controls was obtained in two ways: Profiles as well as the screening forms, and telephone interviews. |
| Data format | Analyzed (descriptive and analytical) |
| Experimental factors | Descriptive statistics and Logistic Regression Analysis using SPSS software were used to examine the relationship between the indicators mentioned in the abstract and CH. |
| Experimental features | The relationship between the Congenital Hypothyroidism with neonatal birth weight (gr), to being twins, sex, parental Consanguinity, and mothers' age was investigated in Khuzestan province in Iran. |
| Data source location | Data Obtained from Newborns who covered by national screening program for diagnosis of congenital hypothyroidism in Khuzestan province in Iran. |
| Data accessibility | All the data are available in this article. |

Value of the data

- This data can be used to evaluate the effect of different factors on congenital hypothyroidism that it is one of the most public health problems in Iran.
- This data can present very useful information about disease risk factors. This type of study is very useful for assessing the relationship between rare outcomes and risk factors.
- This data shows that female gender and twinning was a risk factor for congenital hypothyroidism, and that this association can be evaluated in other studies.

1. Data

The data set of this article provides information on newborn descriptive features and effective factors on Neonatal Congenital Hypothyroidism that occurs in Khuzestan Province, Iran. Geographical information of Khuzestan province was shown in Fig. 1. Descriptive statistics of cases and controls were shown in Fig. 2(a–d). Also, descriptive characteristics of cases and controls on quantitative variables were shown in Table 1. There was the significant association between Female gender [OR = 1.9(1.1–3.1)] and Twinning [OR = 4(1.8–9.7)] with CH. According to multivariate analysis results, the Relationship between Consanguinity and CH was not statistically significant [OR = 1.2 (0.7–1.8)]. Also, there was no statistical association between mother age and Birth weight with CH (Table 2).

2. Experimental design, materials and methods

The data comes from the present case-control study, which was conducted on the newborns that had been covered by the national CH screening program in Khuzestan province in Iran [3]. The inclusion criteria included the background reference to the laboratory for the CH screening experiment, the availability of the newborn's data, and the existence of a reliable phone number from their parents. The subjects were gathered through census, and included the newborns whose TSH of the blood sample taken from their heels was more than or equal to 5 $\mu\text{u/L}$ and the TSH and T4 of their

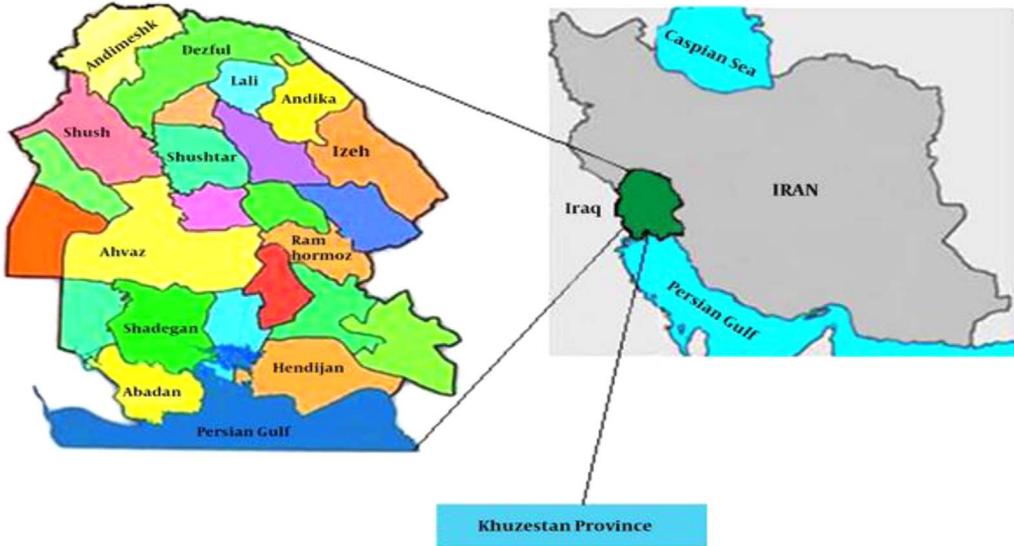


Fig. 1. Khuzestan province in Iran.

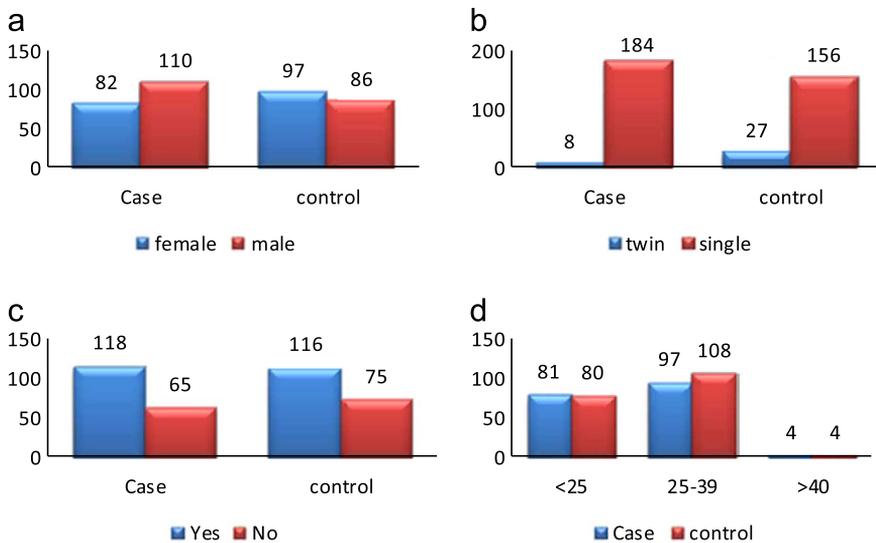


Fig. 2. Descriptive characteristics of cases and controls according to: a-gender, b-twin or single newborn, c- Consanguinity, d- mother age.

Table 1

Descriptive characteristic of cases and controls about quantitative variables.

| Variable | group | N | Mean | Std. Deviation |
|----------|---------|-----|-----------|----------------|
| TSH | Control | 168 | 2.5113 | 2.27 |
| | Case | 177 | 23.7529 | 42.82 |
| Weight | Control | 188 | 3019.9255 | 3466.00 |
| | Case | 183 | 2786.2814 | 1134.94 |
| Age | Control | 192 | 27.2500 | 5.66 |
| | Case | 182 | 26.4231 | 5.79 |

Table 2

Assessing the effect of different factors on congenital hypothyroidism.

| Variables | Control | Case | OR(95%CI) |
|---------------|-------------|-------------|-----------------------|
| Consanguinity | 116 (60%) | 118 (64) | 1.2 (0.7–1.8) |
| Female gender | 82 (42.7%) | 97 (53%) | 1.9 (1.1–3.1) |
| Birth weight | | | 0.9 (0.6–1.2) |
| 2500 > | 37 (19.7%) | 40 (21.9%) | 0.7 (0.4–1.3) |
| 2500–3500 | 109 (58%) | 106 (57.9%) | 1^a |
| 3500 < | 42 (22.3%) | 37 (20.2%) | 0.9 (0.5–1.5) |
| Twin | 8 (4.2%) | 27 (14.8%) | 4 (1.8–9.7) |
| Mother age | | | 0.9(0.6–1.3) |
| 25 > | 80 (41.7%) | 81 (44.5%) | 1^a |
| 25–39 | 108 (56.3%) | 97 (53.3%) | 0.8 (0.5–1.34) |
| 40 | 4 (2.1%) | 4 (2.2%) | 0.9(0.2–4) |

^a Reference group.

venous sample were reported as more than 10 and less than 6.5, respectively; in this way, they had been diagnosed with hypothyroidism, and, as a result, Levothyroxine had been prescribed to them. In order to select the controls, the newborns whose TSH of the blood sample taken from their heels was less than 5 $\mu\text{u/L}$ were chosen among all the newborns screened. Then, healthy newborns were selected from the list through simple random sampling. The cases and controls included a total of 183 and 195 newborns respectively. The understudy variables were neonatal TSH level ($\mu\text{u/L}$), birth weight (gr), age (day), to being twins, sex, parental Consanguinity, and mothers' age.

The data related to being twins, sex, birth weight, mothers' age, were gathered from the profiles as well as the screening forms. Other data, on the other hand, were collected through telephone interviews. Then, the structured questionnaires were completed and, of course, no matching was performed. For assessment effect of the different factors on CH, Multivariate logistic regression with regarding α : 0.5 for the significant level was used. The statistical analysis was performed through the SPSS statistical software (version 19).

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Transparency document. Supplementary material

Transparency document associated with this article can be found in the online version at <https://doi.org/10.1016/j.dib.2018.11.113>.

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