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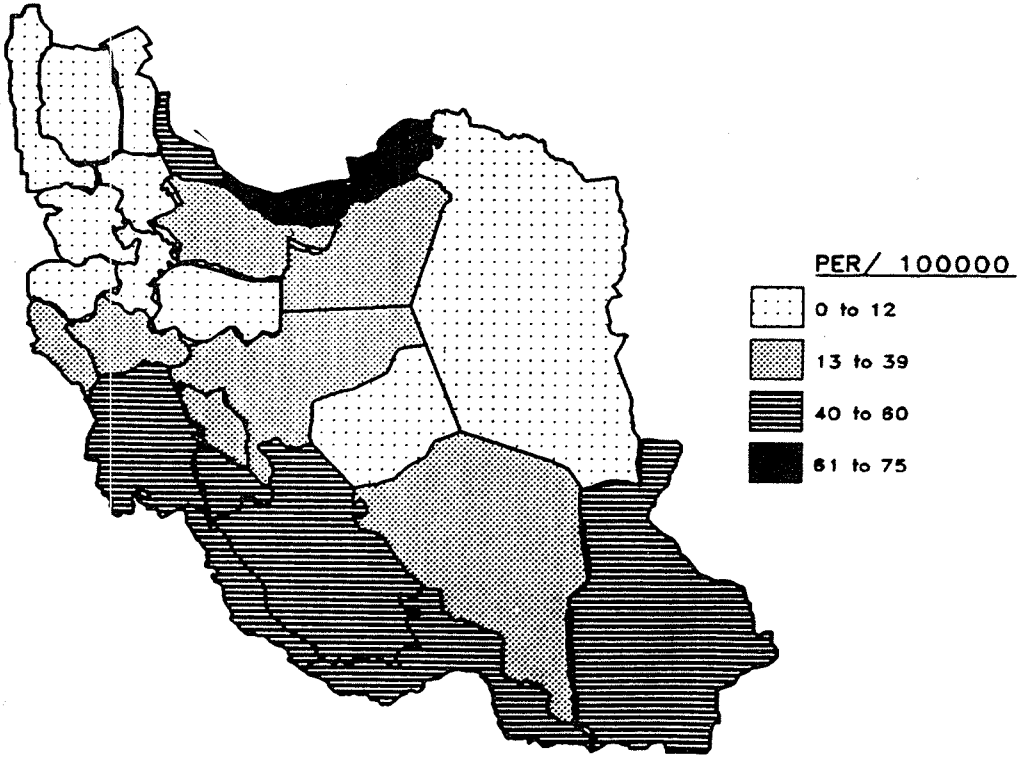

Fig 1 - Frequency of Thalassemia Major in I.R.Iran ; courtesy of the Vice Ministry of Public Health Affairs.

Table 1- Provincial distribution of 14,849 registered beta thalassemia patients in Iran ; adapted from the report of the Vice Ministry of Public Health Affairs , with some rearrangements.

Province	No.	Incidence/100,000
Mazandaran	2696	73.29
Guilan	1332	57.61
Hormozgan	556	50.22
Khouzestan	1718	48.79
Kohkilouyeh & Boyr-Ahmad	267	48.42
Fars	1836	47.20
Bushehr	329	44.99
Sistan & Baulchestan	688	41.20
Charmahal Bakhtiari	260	32.88
Kerman	596	28.51
Isfahan	864	22.15
Ilam	96	20.23
Tehran	2217	18.02
Lorestan	250	15.81
Semnan	69	13.96
Yazd	80	10.56
Kermanshah	171	9.66
Markazi	103	8.20
Kordestan	104	7.92
Hamadan	100	5.95
Ardabil	58	4.91
Zanjan	35	3.32
W. Azarbaijan	76	2.91
E. Azarbaijan	73	2.21
Khorassan	76	1.23
Total	14,849	

million to aproximately 12 million , since 20 years ago) is rather heterogeneous , consisting of all ethnic groups being represented to various extents. Another factor is that some patients previously migrated/travelled to Tehran to receive better medical services.

Figure 1 shows the map of Iran with the geographical distribution of thalassemia incidences (2).

It is reported that 85% of the affected individuals are under 18 years old (4) , a potentially very important issue to be considered. However, in a previous study (1) about 90% has been reported , indicating a decrease of under 18 incidence in the last few years. This can be the effect of the better medical services. Eventhough a decrease in incidence of the birth rate of major thalassemia , as a result of the national five year program , has been suggested (2) , this may be due to the decrease in the population growth rate in the last few years in Iran. National prevention programs , by the Iranian Ministry of Health , may have also had some effects , but further public services and procedures , such as prenatal diagnosis , should come more in to effect. Certainly , further epidemiologic investigations are necessary to confirm the birth rate of major thalassemia in Iran.

provinces adjacent to the Caspian sea and the Persian Gulf (1). In Iran , beta thalassemia is the most common type rather than alpha type seen in the neighboring Arab countries (8).

At the present time , over 14000 cases have been reported and it is estimated that there are over two million carriers (minor) in Iran , probably the highest in the world (1) and it is increasing approximately 1500 new cases annually (2).

The present study deals with the numbers and incidences of registered patients in all provinces of Iran.

Materials and methods

The data of this study was obtained from the report of the Iranian Vice Ministry of Health Affairs (2) , from the public health centers at the urban , sub-urban and rural levels and Iranian Thalassemia Society (4). The infromation was categorised , modified and discussed at the Department of Human Genetics , School of Public Health.

Results and discussion

Table 1 showes the numbers and incidences (per 100,000) of registered beta thalassemia patients in 25 provinces of Iran.

14.849 affected cases have been registered (2) and it is estimated that there are about three million carriers (thalassemia minor) in Iran. The provincial distribution of the affected cases show that the highest incidence is observed in Mazandaran (73.29) and Guilan (57.61) , both on the Caspian sea (north of Iran) , followed by Hormozgan (50.22) Khouzestan (48.79) Kohkiluyeh & Boyr-Ahmad (48.42) and Fars (47.20) (south of Iran) , and the lowest in the north eastern province , Khorassan (1.23) followed by east and west Azarbaijan (2.21 , 2,91) in the north west of Iran.

The incidence for Tehran (18.02) does not have any specific characteristic importance , because Tehran's population (increased from 2

INVESTIGATION OF PREVALENCE OF BETA THALASSEMIA IN IRANIAN PROVINCES

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Key words: *Thalassemia , epidemiology , Iran*

Abstract

14,849 affected cases of beta thalassemia have been registered in 1995 in all provinces of Iran. It is estimated that there are about three million carriers in Iran. The provincial distributions of the affected cases show that the highest incidence in 100 thousand individuals observed was in Mazandaran (73.29) and Gilan (57.61) , both on the Caspian sea (north) , followed by Hormozgan (50.22) , Khouzestan (48.79) , Kohkiluyeh & Boyr-Ahmad (48.42) , Fars (47.20) (south) and the lowest in the north eastern province , Khorassan (1.23) followed by east and west Azarbaijan (2.21 , 2.91) in the north west of Iran.

Introduction

Beta thalassemia is a chronic , familial anaemia , resulting from unbalanced Hb synthesis due to defective production rate of beta polypeptide chain synthesis (3,5). Thalassemias are widely distributed throughout the world , but with higher frequencies in Mediterranean , Middle Eastern , Indian and South East Asian population (7). In these regions , they are a significant cause of morbidity and mortality , but they are frequent because hererozygotes are protected from severe malaria infection (6) ; an example of positive selection. Due to climatic , geographical and ecological conditions , they are the most common among the genetically endemic diseases in Iran , specially in

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