BRIEF COMMUNICATION

Beriberi in Degago refugee camp, Dire Dawa-Eastern Ethiopia

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Abstract: ***To determine the occurrence and the magnitude of beriberi a house to house survey was conducted in Degago refugee camp in 1994. Among 500 subject 60 cases of dry beriberi were detected. Eighty three percent of all beriberi cases were detected in children between the age of 1-10 years. No case was seen in infants. The majority of the cases (90%) had used wheat as their only staple diet where the milling process is usually done at home. The public health importance of beriberi and measures that need to be taken are discussed.***

Introduction

Beriberi is a nutritional disorder formerly wide spread in rice eating people of the East. The Epidemiology, chemical pathology, and response to therapy all suggest that its main features are due to deficiency of thiamin. Three forms of the disease occur: (a) Wet beriberi, characterized by edema often associated with high out-put cardiac failure, (b) Dry beriberi, a polyneuropathy, and (c) the infantile form. Beriberi has occurred in epidemics in a community whose members are all eating similar diets based on same type of rice, wheat or other cereal. A Japanese naval surgeon, Takaki, (1) was the first to demonstrate that beriberi is essentially a nutritional disease occurring when the proportion of polished rice in the diet is excessive. Observation in the Far East showed that beriberi was associated with the consumption of rice that had been highly polished in the raw state (2). Although beriberi is usually associated with a rice diet, this is not invariably the case. The disease may occur in people who consume highly milled wheat (3). Another example of the disease afflicting wheat eaters occurred in 1916 when the British troops ate white bread made from refined wheat flour and out break of beriberi was noted (4). In Ethiopia, Belcher (5) reported for the first time an epidemic of beriberi in migrant laborers in Setit Humera following a malaria outbreak in 1969. Subsequently others reported cases of beriberi in the same region of the country (6,7).

The main objective of the study was to determine the magnitude of beriberi among the Somalia refugees in Degago camp. The findings will be utilized to recommend public health interventions.

Methods

Degago refugee camp is located 164 Kms east of Dire Dawa town. The climatic condition of the area is hot with mean

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temperature of 36 degree Celsius. All the refugees are Somali by nationality and Muslims by religion.

Orientation to established medical team (one nurse, two health assistants, one sanitarian, two community health agents) was initially given about the nature and clinical presentation of dry and wet beriberi by the investigator. The medical team made house to house survey and referred suspected cases to the health center in the camp for further investigation.

In the health center the investigator took complete medical history and physical examination was done on referred cases. All diagnosed cases were admitted to the health center and given vitamin B complex tablets. Observation was continued for one month after admission. After one month of treatment with vitamin B complex all cases showed marked improvement with clinical cure. Hence, the diagnosis of beriberi was based on clinical data and response to treatment. The study was conducted between June 3, 1994 and July 7, 1994.

Results

Out of 500 referred cases to the health center a total of 60 cases of dry beriberi were identified. No case of wet beriberi was seen. Of the total cases of dry beriberi 18 (30%) were males and 42 (70%) were females. Eighty three percent of the cases were within the age range of 1-10 years. The disease was not seen in children under one years of age (Table 1). On arrival to the health center 95% of the cases gave history of joint pain (knee joint), pain in the lower extremities, difficulty of walking, irritability particularly when walking was attempted by the patient and anorexia (Table 2).

The duration of main complaints ranged from 2 weeks to 12 weeks in the majority of the cases. The main physical finding included: irritability (80%), tachycardia (83%), failure (difficulty) to walk (87%), and severe tenderness on pressure (palpation) of calf and thigh muscles (100%) (Table 3).

Table 1. Distribution of cases of dry beriberi by age and sex in Degago refugee camp in 1994.

Age in years	Sex		Total
	M	F	
<1	0	0	0
1-10	17	33	50
11-20	0	2	2
21-30	0	3	3
31-40	0	2	2
41-50	0	2	2
51-60	1	0	1
>60	0	0	0
Total	18	42	60

Table 2. Distribution of cases of dry beriberi by major symptoms in Degago refugee camp in 1994.

Symptoms	Yes	No
Joint pain (knee)	60	0
Burning pain in the legs	60	0
Difficulty of walking	56	4
Irritability when walking	50	10
Loss of appetite (anorexia)	60	0

All the family members of the index case said that they use wheat to prepare the usual family food (Porridge, 'Injera', 'Kinche', 'Kitta', etc.) and denied usage of other food items in their diet. The majority of cases (90%) used home