



Prevalence of Hyperuricemia in Mizoram

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Abstract

The prevalence of hyperuricemia has been increasing and it has not been investigating in Mizoram population. The purpose of the present study was to investigate the prevalence of hyperuricemia among patients attending OPD of Civil Hospital, Aizawl, Mizoram, India for medical checkup. Serum uric acid was estimate by Uricase/PAP method. Overall, the prevalence of hyperuricemia in the studied population was 21.42%. Hyperuricemia was higher in men than in women (37.25% vs 22.64%). The risk point of age for hyperuricemia as 30 in male and 60 in female, respectively. Prevalence of hyperuricemia was found to be statistically significant.

Keywords: Serum uric acid, Hyperuricemia

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Introduction

Hyperuricemia can be the consequence of increased uric acid production or decreased excretion. [1] Hyperuricemia is most commonly defined by serum uric acid concentration greater than 7mg/dl in man and 6 mg/dl in women. Many factors contribute to hyperuricemia,

including: genetics, insulin resistance, hypertension, renal insufficiency, obesity, diet, use of diuretics, consumption of alcoholic beverages.[2] dyslipidemia, [3] cardiovascular diseases, [4-6] peripheral arterial diseases, [7] markers of inflammation [8] and oxidative stress. [9]

Hyperuricemia is diagnosed in 5-30 % of the general population. [10] In the past several decades, the prevalence of hyperuricemia varied greatly and appeared to be increasing. [11] In Nepal, the prevalence of hyperuricemia was 21.42% [12] and in Thailand, 10.6%. [13]In accordance with previous studies, it is found that serum uric acid levels are higher in men than in women, although uric acid levels in women tend to increase above the age of 50 [14-16]. These sex differences of serum uric acid levels and the increase after the menopause in females have been reported previously and attributed to the influence of sexual hormones. [17]

Hyperuricemia may induce many complications, such as chronic gout, distortion of joint and renal failure. Therefore, it is important to study the prevalence of hyperuricemia in Mizoram. Till now, there is no study on the prevalence of hyperuricemia in Aizawl district of Mizoram, India. So the present study is carried out to determine the prevalence of hyperuricemia among the men and women of Mizoram state.

Materials and Methods

The present study included 1900 cases in the age range of 20 to 85 years. Blood samples were collected by vein puncture collected in clean vaccutainers and serum uric acid level was estimated by kit method Uricase/PAP method using, Erba semi automated analyser. Serum uric acid concentration >7mg/dl in men and 6 mg/dl in women was considered as hyperuricemia.

Results

Table No 1. The prevalence of Hyperuricemia in different gender

Sex	Normal	Elevated	Prevalence (%)
Male	816	304	37.25
Female	636	144	22.64
Total	1452	448	

Table No 2. The prevalence of Hyperuricemia in different age groups (female)

Age	Female	Normal	Elevated
<30	176	140	36 (20.45%)
31-40	136	108	28 (20.58%)
41-50	148	120	28 (18.91%)
51-60	64	56	8 (12.5%)
61-70	44	22	20 (45.45%)
>70	55	39	16 (30.76%)

Table No 3. The prevalence of Hyperuricemia in different age groups (male)

Age	Male	Normal	Elevated
< 30	172	120	52 (30.23%)
31-40	180	100	80 (44.4%)
41-50	204	116	88 (43.13%)
51-60	176	124	52 (29.54%)
61-70	44	28	16 (36.36%)
>70	56	36	20 (35.71%)

Table I showed that 1900 patients were investigated, 1120 male and 780 female respectively. Overall prevalence of hyperuricemia was 21.42%, 304 (37.25%) in

male and 144 (22.64%) in female. These findings were statistically significant. (p value >0.0001.)

Table II and III also showed prevalence of hyperuricemia in different age group in female and male. Prevalence range from 12.5% to 45.45% in female, and it range from 29.54% to 44.4 % in male. It was found that 30 years was the risk point of age and it was 60 years in female.

Discussion

The concentration of serum uric acid increases gradually with age, rising about 10% between the ages of 20 and 60 years. [28] Higher serum uric acid concentration and higher prevalence of hyperuricemia in men than in women were consistent with the previous study in Hangzhou [18] population and from studies of various populations [19, 20, 21, 22]. Hyperuricemia is consistently more common in men than in women. A study based on 3013 female residents of Tecumseh, MI and a study based on 254 women in the UK [23] reported a rise in serum uric acid levels after age 50 to 54 years with a subsequent plateau. Another studies based on [18, 3, 24] Japanese females reported increasing uric acid levels up to the age of 70 years and over. [24] According to the present study serum uric acid level in female was highest in age group 60 and in male 30. In both male and female, serum uric acid level was found to be lowest in age group 50. Increase serum uric acid level after menopause is due to hormone estrogen [25] reaching concentration similar to those in men. But in men uric acid level is found to be decreased with age, [26, 27] the mechanism behind this remain unclear.

Conclusion

The serum uric acid level was higher in male than in female. Hyperuricemia can lead to complications like gouty arthritis and renal failure. A large community based Indian population study is needed is needed.

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