



## PREVALENCE OF HYPERURICEMIA IN SUKKUR; PAKISTAN: A CROSS SECTIONAL SURVEY.

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**ABSTRACT... Objectives:** To find out the frequency uric acid levels in Pakistani general population. **Study Design:** Cross sectional study. **Setting:** Hira Medical Centre Sukkur. **Period:** July 1 2018 to July 31, 2018. **Materials and Methods:** The survey for was conducted in various hospitals and clinics all over Pakistan. 900 numbers of questionnaires were distributed of which 801 numbers responded. Those who agreed to be part of this study were asked. Uric acid levels were assessed by using UASure Blood Uric Acid Monitoring System. Those with greater than 6 mg/dl were classified as hyperuricemia according to American college of Rheumatology. Descriptive analysis was performed with SPSS software version 23. Frequency of patients with hyperuricemia was calculated. Stratification with respect to gender and age was calculated via cross tabulation. **Results:** Out of 135 patients, 102 (75.5%) were male while 33 (25.5%) were female with mean  $\pm$  SD age of  $56.72 \pm 12.24$  years. The prevalence of hyperuricemia was 33.33% (n=45). Mean Uric acid levels were  $6.12 \pm 1.68$  mg/dl. 31.3% (n=32) male and 39.3% (n=13) females were hyperuricemic. **Conclusion:** Prevalence of Hyperuricemia in Sukkur is alarming and efforts should be made to aware patients about the consequences of.

**Key words:** Gout, Hyperuricemia, Prevalence, Pakistan, Uric Acid.

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### INTRODUCTION

Hyperuricemia still has not gotten the attention in developing country and there is very meagre data available on hyperuricemia from developing country.<sup>1</sup> Break-down of Purine nucleotide, both endogenous that is break down of nucleic acid and exogenous taken from meal, results in uric acid.<sup>2,3,4</sup> A uric acid level of more than 6.8 mg/dl at normal body temperature of 37 °C and neutral pH is considered as Hyperuricemia.<sup>5</sup> Hyperuricemia have been identified as a risk factor for diseases such as Ischemic heart disease, Stroke, Peripheral artheriopathy, diabetes and renal failure. High serum uric acid levels have now been confirmed as a prognostic predictor of survival in heart failure. Even if risk factors such as metabolic syndrome and hyperuricemic diuretics are removed, the risk remains for above mentioned disease with elevated uric acid, making hyperuricemia an independent risk factor.<sup>6-10</sup>

A local study published in 2011 showed uric

acid levels are high in older people in Gadap, a small town of Karachi.<sup>11</sup> Another study showed a mean uric acid level of  $6.11 \pm 1.7$  mg/dl.<sup>12</sup> There is very little data available on prevalence of hyperuricemia in Pakistan. Search of Pakmedinet.com with keyword of hyperuricemia and uric acid showed less than 15 studies. Compared to it, Diabetes showed 2140 studies and hypertension showed 1543 studies.

The purpose of my study is to determine the prevalence of hyperuricemic patient in Sukkur so a regional effort can be made to aware people about hyperuricemia and its consequences in Pakistan.

### PATIENTS AND METHODS

This cross sectional study was conducted in Hira Medical Centre Sukkur. From July 1 2018 to July 31, 2018, total of 135 that fulfilled the inclusion criteria were included in the study after taking informed consent. Those who agreed to be part

of this study were asked. Uric acid levels were assessed by using UASure Blood Uric Acid Monitoring System. Those with greater than 6.8 mg/dl were classified as hyperuricemia.<sup>5</sup> Descriptive analysis was performed with SPSS software version 23. Frequency of patients with hyperuricemia was calculated. Stratification with respect to gender and age was calculated via cross tabulation.

## RESULTS

Out of 135 patients, 102 (75.5%) were male while 33 (25.5%) were female with mean  $\pm$  SD age of  $56.72 \pm 12.24$  years (Table-I). The prevalence of hyperuricemia was 33.33% (n=45) (Table-II). Mean Uric acid levels were  $6.12 \pm 1.68$  mg/dl. 31.3% (n=32) male and 39.3% (n=13) females were hyperuricemic (Table-III).

	Mean	Std. Deviation
Age	56.72	12.24
<b>Uric Acid</b>		
Total	6.12	1.68
Male	6.28	1.70
Female	5.92	1.58

**Table-I. Descriptive data**

Uric Acid Level	N (%)
Normouric	90 (66.6%)
Hyperuricemic	45 (33.3%)

**Table-II. Prevalence of hyperuricemia**

Gender	Normouricemia n (%)	Hyperuricemia n (%)
Male	70 (68.7%)	32 (31.3%)
Female	19 (57.6%)	14 (42.4%)

**Table-III. Prevalence of hyperuricemia according to gender**

## DISCUSSION

In this survey, conducted in Sukkur, Prevalence of hyperuricemia was substantial. 33.3%. This study shall be beneficial to add to very limited data available on prevalence of hyperuricemia. The prevalence of hyperuricemia in Sukkur is comparable to national prevalence of hyperuricemia which was stated as 39% in study

published in 2017 by Qudwai W.<sup>12</sup> Qudwai stated that mean uric acid level is  $6.11 \pm 1.7$  mg/dl. Mean uric acid level in males was  $6.19 \pm 1.65$  mg/dl and in females it was recorded as  $6.04 \pm 1.75$  mg/dl.<sup>12</sup> Mean uric acid level in our study was  $6.12 \pm 1.68$  and that of male was  $6.28 \pm 1.70$  and in female it was  $5.92 \pm 1.58$ . Qudwai in his study established hyperuricemia was more common in females in Pakistan (49.7%) which was also the case in our study which had prevalence of hyperuricemia in female (42.4%) compared to male of (31.3%). Asia country has shown increase trend for prevalence of hyperuricemia with China showing prevalence as high as 25%, Taiwan as high as 52% and Indonesia with 18%.<sup>13</sup> Our neighbouring country India has a prevalence of 44.6% as per study conducted in 2012.<sup>14</sup>

This trend that indicates high prevalence of hyperuricemia can be attributed to increasing age which means increase number of years with chronic diseases like hypertension and diabetes.<sup>15</sup> Other reasons for this increase prevalence of hyperuricemia in developing country such as India and Pakistan may be recent changes in diet, a sedentary lifestyle, antihypertensive medications mainly diuretics.<sup>16,17</sup>

## CONCLUSION

The prevalence of hyperuricemia is high in Sukkur and it is very necessary to give equal attention and awareness to hyperuricemia as to the chronic diseases.



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### AUTHORSHIP AND CONTRIBUTION DECLARATION

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1	Altaf Ahmed Shaikh	Conception, Data collection and manuscript writing.	
2	Rajesh	Data collection and analysis.	
3	Anam Altaf	Data collection and analysis.	