# RACE, TEMPERATURE AND WATER HARDNESS FACTORS AND DISTRIBUTION OF URINARY STONES, IN THE KHUZESTAN PROVINCE, IRAN

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Urinary stone diseases in the Khuzestan province, in the southwest of Iran is growing and it required extensive studies on various factors of the urinary stones formation in this province.
In this research, in addition to distribution of urinary stones in different areas of province, the role of bio (race), climate (temperature) and geology (water hardness) factors in urinary stones diversity has been studied. Mineralogical studied using XRD showed that collected samples can be divided in to three mineralogical groups: uric acid, calcium oxalate and phosphate.
The results show that, arab's and persian' (lores tribes) races urinary stones according to their mineralogy, have a same variation pattern. Also the results which attained from temperature effect investigation on the mineralogy of urinary stones, confirms that from Mediterranean sub-humid climates (north-eastern area of the provience) to warm and dry climates (south and southwest area of the province), oxalate stones and urate stones concentration decreases and increases respectively. For instance in some warm and dry climates which have the highest annual average temperature (25°C), uric acid stones are the only mineralogy phases.
Finally, with comparing water hardness level of different areas of the Khuzestan province with mineralogy of collected samples, conclude that despite of positive correlation in some regions, there is no obvious correlations in general and it needs much more researches.

Keywords: urinary stone, Khuzestan, Iran