

# Prevalence of DM, HTN and Abnormal Serum Creatinine Level in Hospitalized Cardiac Patient: A Cross-Sectional Study

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**Abstract:** Diabetes Mellitus (DM), Blood Hypertension (HTN) and Chronic Kidney Disease (CKD) are from the highest prevalence chronic diseases in Saudi Arabia. Previous researches revealed the correlation between increased Creatinine and mortality rates among Coronary Artery Syndrome (CAS) patients. This research aims to assess the prevalence of DM, HTN and abnormal serum Creatinine level among hospitalized cardiac patients, in Hofuf, Saudi Arabia. A cross-sectional study is done including a total of 58 patients from Prince Sultan Cardiac Center, in Hofuf. Analysis of study results showed typical prevalence of DM and HTN, and highest prevalence of abnormal Creatinine level among patients who suffer from both together.

**Keywords:** Diabetes Mellitus (DM), Blood Hypertension (HTN) and Chronic Kidney Disease (CKD).

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## 1. INTRODUCTION

Saudi Arabia has registered some of the highest prevalence rates of Diabetes Mellitus (DM), Blood Hypertension (HTN) as well as Chronic Kidney Disease (CKD) with the rates increasing progressively (Al-Sayyari & Shaheen, 2011). Both HTN and DM have been found to be among the most important predisposing factors for cardiovascular diseases (Sowers, Epstein, & Frohlich, 2001). Statistical information contained in the Saudi Health Information Survey Handbook (2013) suggested that the prevalence rates of DM among males was 14.8% while among females it was 11.3%. Among individuals aged between 25 and 34 years, the incidence rate of this condition is about 7.8% while the incidence rate rises as high as 50.4% among individuals aged above 65 years. In the other hand, The prevalence rate of HTN was found to be 17.7% among males while that of females was estimated at 12.5% with the highest rate being recorded as 65.2% for individuals aged above 65 years. Marked damages to the functioning nephrons may be detected through a rise in the level of serum Creatinine indicating the early stages of kidney disease (Martin A. Crock., 2006). Increased serum Creatinine levels act as important markers of hospital mortality at admission for patients suffering from ACS as well as a one-year increase in the mortality rate among patients suffering from AMI (C. B. Granger, 2003 ; Cakar, Gunduz, Vatan, Kocayigit, and Akdemir, 2012). Currently, there are no published studies about the prevalence of DM, HTN and serum Creatinine level among hospitalized cardiac patients in Saudi Arabia. As such, this study aims to assess the prevalence of DM, HTN and abnormally high serum Creatinine levels among hospitalized cardiac patients in Hofuf, Saudi Arabia.

## 2. METHODOLOGY

The current observational cross-sectional study obtained approval from the medical director and the department of research in Prince Sultan Cardiac Center Hofuf (PSCCH), Saudi Arabia. The variables included in the study were DM, HTN as well as high abnormal serum Creatinine level. The patient was considered to be hypertensive or diabetic upon being diagnosed during hospitalization and being subjected to treatment, or if the diagnosis was made before admission and the patient had been advised to start treatment. Abnormal serum Creatinine levels were noted if the levels exceeded

115 umol/l among males or 90 umol/l among females. The sampling process included all the patients admitted to the adult cardiology department in PSCCH and was done from 13<sup>th</sup> November 2016 to 3<sup>rd</sup> December 2016, making up a convenience sample. As part of the exclusion criteria, all patients admitted and discharged within 48 hours were exempted from the sample. Data collection was done by directly engaging patients in question and answer sessions as well as observing the patients' history records and relative laboratory results. Finally, the statistical analysis of results was performed manually.

### 3. RESULTS AND DISCUSSION

A total of 58 patients were included in the study out of which 33(56.85%) were diagnosed with DM. Furthermore, 33 patients (56.85%) were diagnosed with HTN while 22 (37.9%) were diagnosed with both. Also, 11 patients (18.9%) were diagnosed with abnormal serum Creatinine level, Figure 1, and Table 1 show a comparison of those results. Moreover, out of patients with abnormal serum Creatinine level, 9 had both DM and HTN while 2 had either of them. The final results are showing identical rates for both DM and HTN. In addition, patients diagnosed with both DM and HTN were having a significantly high risk of developing abnormal serum Creatinine level.

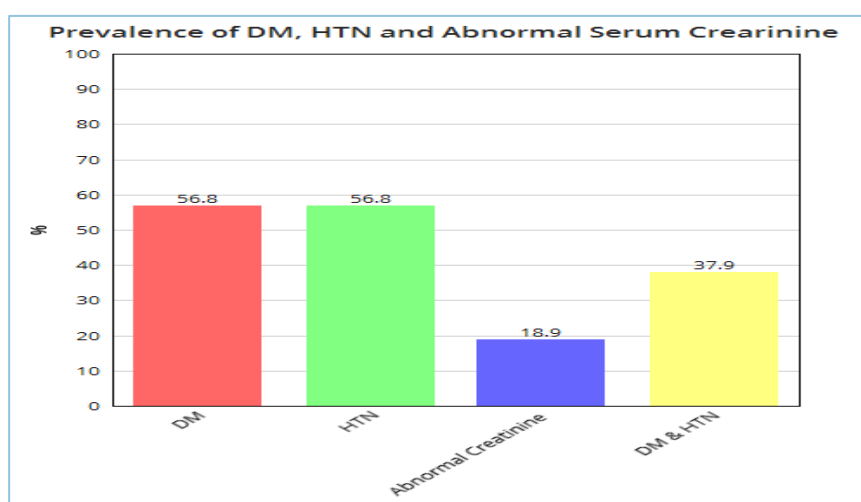


Figure 1: DM, HTN, and Serum Creatinine Results Comparison.

Table 1: DM, HTN, and Serum Creatinine Results Percentage

Description	NO.	Percentage
Patient with DM.	33	56.8%
Patient with HTN.	33	56.8%
Patient with abnormal serum Creatinine level	11	18.9%
Patient with both DM and HTN.	22	37.9%

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