



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.809432>Available online at: <http://www.iajps.com>**Research Article****RETROSPECTIVE ANALYSIS OF RECURRENT HOSPITAL
ADMISSIONS DUE TO GOUT AND THE ASSOCIATED
COMORBIDITIES AT A TERTIARY CARE HOSPITAL****Niaz Hussain^{1*}, Muhammad Iqbal², Nasrullah Aamir³**¹Niaz Hussain; MBBS, FCPS, Department of Orthopedics, Liaquat University of Medical and Health Sciences, Jamshoro, E-mail: niaz_h@hotmail.com²Muhammad Iqbal; MBBS, FCPS, Department of Medicine, Liaquat University of Medical and Health Sciences, Jamshoro, E-mail: muhammadiqbalshah22@gmail.com³Nasrullah Aamir; MBBS, FCPS, Department of Medicine, Peoples University of Medical and Health Sciences, Nawabshah, E-mail: aamer.nasrullah@gmail.com**Abstract:****Objective:** To analyze recurrent hospital admissions to the hospital due to gout and associated comorbidities**Methodology:** The retrospective analysis is based upon the hospital records of 200 consecutive patients (non-probability-consecutive sampling) presenting again to the study setting (after prior admission and discharge) due to gout and its associated comorbidities from January 2016 to December 2016. The characteristics of all the patients and the recurrent admissions were analyzed as individual variables and analyzed using SPSS v. 19.0 and Microsoft Excel 2016.**Results:** A total of 200 admissions due of gout were aggravated by their respective comorbidities, meriting re-admission. The comorbidities meriting re-admission included hypertension (40%), renal anomalies (25%) and diabetes mellitus (30%). 5% of the re-admissions were due to gout alone, without any comorbidity.**Conclusion:** This study is the first of its kind, to analyze the re-admission of gout patients and the spectrum of comorbidities behind the re-admissions a tertiary care hospital in a major city of Hyderabad. The hospital plays host to a wide array of patients hailing from diverse sociodemographic backgrounds.**Keywords:** Gout, Diabetes mellitus, Hypertension, Renal anomalies and Medical comorbidities.**Corresponding author:****Dr. Niaz Hussain,**MBBS, FCPS, Department of Orthopedics,
Liaquat University Of Medical and Health Sciences,
Jamshoro, email: niaz_h@hotmail.com

Cell No: 00923333008501

Email: niaz_h@hotmail.com

orcid.org/0000-0002-1985-4386

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Please cite this article in press as Niaz Hussain *et al*, **Retrospective Analysis of Recurrent Hospital Admissions Due to Gout and the Associated Comorbidities at a Tertiary Care Hospital**, *Indo Am. J. P. Sci*, 2017; 4(06).

INTRODUCTION:

Gout is a well-known and frequently occurring type of inflammatory arthritis brought about by the synthesis of uric acid crystals in the skeletal junctions of the body. Data from the western world (United States, United Kingdom, New Zealand and Australia) shows that gout prevalence is on the rise [1, 2].

In addition to being a significant burden on the healthcare system, gout exhibits hazardous effects on individuals and the society at large. It reduces one's health related quality of life, weakens one's ability to function as a healthy and effective unit of the society thus costing the individual and the society on multiple levels. [3, 4] Furthermore, the reduced ability of a person to serve as an effective and productive unit of society stems from impairment, debility and disability and leads to impaired work productivity [5, 6].

All members of the society suffer from the stated ill-effects of the disease but the age group that proves the most costly in-terms of damage to the society heightening of hospital burden are is the working adults (25-64 years) [7]. What is worse that fresh evidence suggest gout to be a poorly treated ailment is undertreated, and even when it is treated, the non-adherence exhibited by the patients paints a grim picture. [8, 9]

Gout, apart from being troublesome on its own, serves as an independant contributory factor towards diseases of cardiovascular origin. It is responsible for hike in the all cause-mortality rates of the society and also contributes to the greater prevalence of medical comorbidities in the society [4, 10]. The fact that diseases of cardiovascular origin (including hypertension), endocrine disorders (especially diabetes mellitus) and renal anomalies are all common in patients suffering from gout patients supports this claim [11–14].

Thus research also reiterates the claim that the severity of gout is heightened with the increasing number of comorbidities and ads to the hospital burden by increasing the likelihood of re-admission to the hospitals [12].As stated above, this research has numerous novel aspects imbedded. Not only does this research take tap into the untouched hospital re-admission data that provides useful insight into the true hospital burden, it also analyzed separately the readmissions brought about not only by gout alone but the spectrum of comorbidities as well. [12, 13]

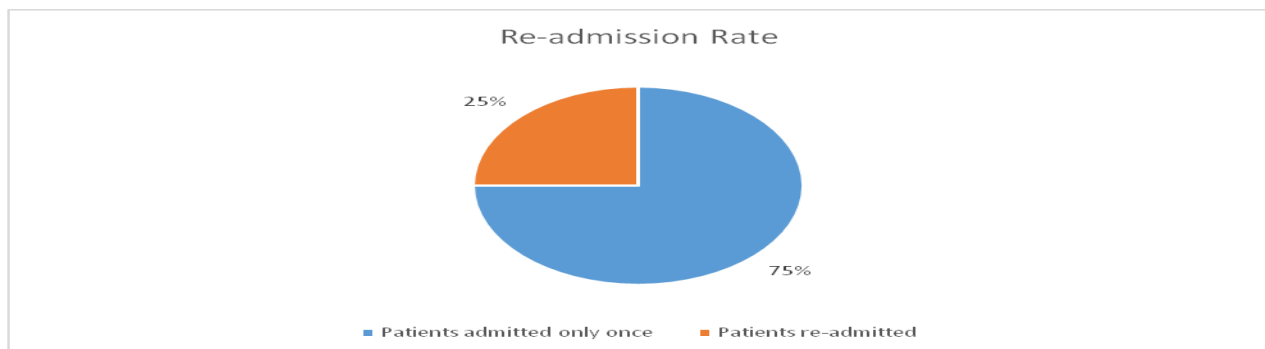
We hope that our research will provide the much needed observational data that shall serve as the basis for further research to devise interventions aimed at reducing the number of hospital re-admissions and thus the burden on the resources of health sector.

METHODOLOGY:

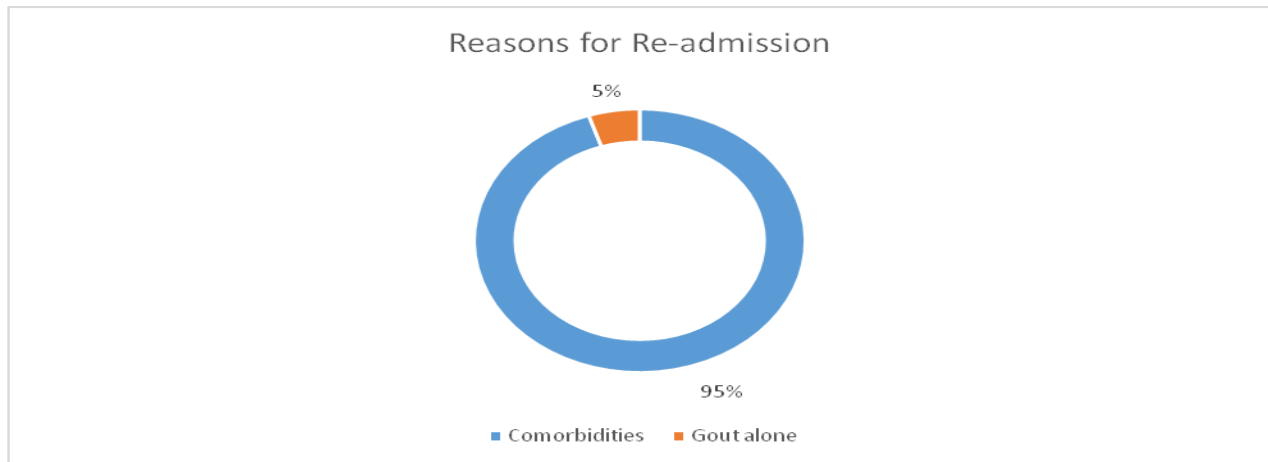
The retrospective analysis is based upon the hospital records of 200 consecutive patients (non-probability-consecutive sampling) presenting again to the study setting (after prior admission and discharge) due to gout and its associated comorbidities from January 2016 to December 2016. The characteristics of all the patients and the recurrent admissions were analyzed as individual variables and analyzed using SPSS v. 19.0 and Microsoft Excel 2016.

RESULTS:

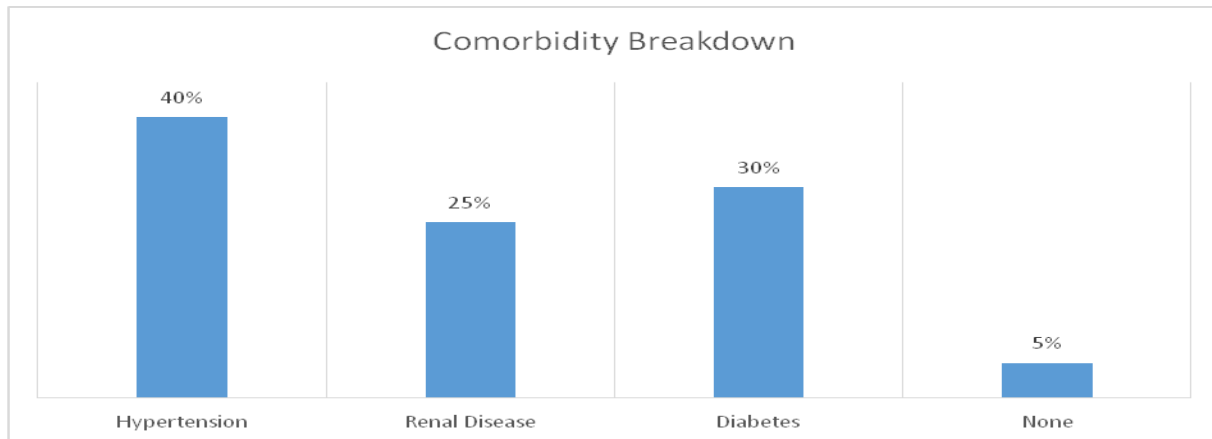
A total of 800 gout patients presented at the study setting, out of which 200 presented back to the hospital at least one more time after initial discharge from the hospital.



The re-admissions were often due to a variety of comorbidities aggravating the primary disease i.e. gout. 5% of the re-admissions were due to gout alone, without any comorbidity, while 95% of the times, the re-admission were merited aggravated health condition due to comorbidities.



The comorbidities meriting re-admission included hypertension (40%), renal anomalies (25%) and diabetes mellitus (30%).



DISCUSSION:

Our research is one of a kind in the developing world and entirely novel in Pakistan. The need to carry out a research is justified from the fact that the incidence of prevalence of gout is on a rise un-paralleled in history [1, 2]. The need for our research is further proved by numerous research studies that suggest that comorbidities are common in gout and add to the overall health burden due to the disease. Literature also explicitly states that the incidence of hospital admission is increased with the increasing number of comorbidities. [11–16].

A considerable number of patients presented to the hospital again seeking re-admission after initial discharge from the hospital. It can be safely assumed that those presenting again were either victim to treatment resistant gout, or they suffered from the basic flaws e.g. inadequate/unsuitable treatment, poor-treatment adherence or both. These factors have been found extensively in literature, especially treatment non-adherence [8]. Exploring further the phenomenon of non-adherence to treatment among people of gout, an extensive review of literature reveals that skipping allopurinol dosing often is to

blame for deteriorating the condition to an extent that re-admission becomes necessary [17, 18].

The results yielded by our retrospective analysis compare and contrast, on different levels, to the results of international cohorts of great repute [11–14]. Our results show that the rates of one of the most common comorbidity, diabetes mellitus were high i.e. 30%, when compared to those shown in the cohorts of Annemans (8.3%) and Wu (18.4% and 18.5%) [11, 12]. On the contrary, the hypertension rate yielded in our result i.e. 40% was lesser when compared to other cohorts, such as Phipps-Green (52–66%) and Riedel (58%) [19, 20].

Reviewing literature at length and drawing further comparisons, it was revealed that the rates of renal disease in cohorts such as Annemans primary care cohort (5–10%) were lower when compared to our rate of 25%. However other cohorts such as Phipps-Green (30–35%) and Wu (29–30%) yielded rates higher than our study [12, 14].

Overall we encountered 800 patients presenting with gout during the study duration and judging by this high turnout, it is safe to assume that the incidence and prevalence in our study setting has rates to be adversely reckoned. It leads ahead and the rates of incidence and prevalence in reputed published cohorts [11, 12, 14, 19 & 20].

The current condition is worrisome on multiple levels. Firstly, the incidence and prevalence of the disease is on the rise and consequently the rates of primary admission are increasing and thus adding to the already high healthcare burden. Secondly, owing to factors such as inadequate treatment, treatment non-adherence the re-admission rates are climbing. The re-admission rates are further increased due the heightened number of comorbidities making the health related quality of life. [21]

So what do we owe this rise? Evidence exists, linking the disease under discussion (I.e. gout) to comorbidities such as diabetes mellitus, renal anomalies and hypertension but the extent remains debatable [22–24]. Further research needs to be conducted to ascertain the debatable aspects.

CONCLUSION:

This study is the first of its kind, to analyze the re-admission of gout patients and the spectrum of comorbidities behind the re-admissions a tertiary care hospital in a major city of Hyderabad. The hospital

plays host to a wide array of patients hailing from diverse sociodemographic backgrounds.

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