

HOSPITALIZATION DUE TO COMIOGENIC DISEASES IN TERTIARY CARE HOSPITAL PESHAWAR PAKISTAN

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ABSTRACT

Introduction: This study conducted in order to evaluate the admissions due to comiogenesis that affect the patient quality of life. The identification of iatrogenic admissions and their possible solutions to achieve the optimal therapeutic effects of the patients.

Material & Methods: The total of 32 days study carried out in Endocrinology department, the total of 202 patient cases were evaluated by standard core indicator recommended by “World Health Organization”.

Results: The results of current studies showed that 121 (59.9%) male and 81 (40.1%) were female hospitalized in which 35 (17.3%) patients were due to iatrogenic diseases. The most common comiogenic diseases were due irrational use of insulin; 13 patients were due to hypoglycemia and 11 were due lipodystrophy, 5 patients hospitalized with Cushing syndrome due to steroids, 3 hypothyroidism patients were due to Carbimazole and 3 neutropenic patients were due to Piperacillin + Tazobactam.

Conclusion: The improper use of medications leads to iatrogenic/comiogenic illnesses that may be prevented if qualified and competent health care providers are consulted. The extensive intervention and standard guidelines implementation are required in order to improve the health of the patients. The prescription standard indicator was not followed up to the mark to improve overall health status and rational prescribing.

Key Words: Prescription errors; iatrogenic diseases, adverse effects, comiogenesis

Authors’ Declaration: The authors declared no conflict of interest and agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved. All authors contributed substantially to the planning of research, question designing, data collection, data analysis and write-up of the article.

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This article may be cited as: Khan M, Ullah R, Riaz M, Rahman N. Hospitalization due to comiogenic diseases in tertiary care lady reading hospital Peshawar Pakistan. *Rehman J Health Sci.* 2022;4(2). 77-81

Submitted: April 15, 2021 Revisions Submitted: May 11, 2021 Accepted: December 09, 2021

INTRODUCTION

The term 'iatrogenic' was introduced in 1924 which is derived from two Greek “iatro” mean “medical or physician” and “genesis” mean “origin or induce,” means the origination of negative effects induced by medical procedures and these physicians and drugs acts as a ‘pathogens or sickening agents’.^{1,2} According to medical dictionary iatrogenic diseases is defined as ‘the illness induced by physician or medication, in other words, the collection of symptoms induced by the doctors’ actions for

the treatment of a particular disease’. The “WHO” chooses the words, iatrogenic is adverse complications or reactions persuade by the non-drug use.³ Later, iatrogenic illness was extended to include harms associated with faulty and contraindicated care.⁴ Then it was defined as ‘complication resulting from reactions to medication or procedures, physical injury or accident, psychological decompensation, nosocomial infections, and medical or nursing errors - including errors of

omission.⁵ The iatrogenic disease has three leading causes either from diagnosis, drugs, or instrumental techniques. Various factors can cause iatrogenic diseases, like anti-tubercular; isoniazid induces jaundice, and ergotamine causes foot gangrene in 21 years of a woman.^{3,4} Some therapeutic and diagnostic tools can also cause iatrogenesis that can be avoided by proper use of these instruments.³⁻⁵

The word “Comiogenic” was introduced by Sharpe and Faden due to the restrictions of term iatrogenic to physician induce illnesses.⁴ The term “Comiogenic” from Greek word Komein means care encompasses all elements in the health care system that may produce illness. The comiogenic illness would not have been occurred if the person was not exposed to the healthcare set up. The cause of the comiogenic illnesses are preventable errors and poor system design.⁶ The illness may occur not only due to the omissions of physicians but of other health care provider e.g. nurses, technicians, pharmacist, supporting staff, orderlies, devices, substandard drugs (pharmaceutical manufacturers) and all other personels who are indirectly involved in the system (Fig 1).⁴

The iatrogenesis/comiogenesis is considered as on fifth that leads to death.^{7,8} The iatrogenic diseases are of three types minor, moderate and fatal.⁹ The present study was designed to know the number and types of iatrogenic/comiogenic illnesses that occurs in tertiary care hospital in Peshawar Pakistan.

MATERIAL AND METHODS

In this study the 32 days concurrent prescriptions was evaluated in Endocrinology department in Tertiary Care Hospital, Peshawar Pakistan. All of the patients with various diseases like diabetes mellitus, thyroid and cushing syndrome were included and mostly focused on iatrogenic admissions. None of the discharged patients were excluded.

Data collection and sample size

The total number of 202 patients case histories were collected by “WHO Nairobi 1985” recommended 30 prescriptions for sample per facility” the duration of data collection was from January-March 2019. The data was collected on official permission of hospital director and manager of pharmacy. In this study 3.36 prescriptions per day were collected. Every prescription was analyzed using “WHO” indicators as a standard for prescription review. The collected data documented by Microsoft

word and analyzed and tabulated by Graph Pad Prism and Microsoft Excel.

Ethics

All the information collected with the consent of the concerned patient and were kept confidentially to avoid any loss or spread of information

RESULTS

The total numbers of 202 case histories were evaluated, at ward level in Endocrinology Department. The data contains both male 121 (59.9%) and female patients 81 (40%), (Fig 2). After reading their case histories (n=202), we found that 35 (17.3%) patients were hospitalized due to iatrogenic/comiogenic diseases, which were categorized into drug induced 24 (68.5%), instrumental (0) and parenteral induced 11 (31.4%). The comiogenic illness due to irrational/improper use of drugs were Cushing syndrome, Neutropenia, and Hypothyroidism. Lipodystrophy and parenteral lipodystrophy were observed due to subcutaneous use of insulin due to steroids (Table 1 & Figs. 3 and 4).

DISCUSSION

In one year, study carried out by Trunet *et al.*, it was reported that 12.6% hospitalized cases were due to iatrogenic diseases in which the administration errors were 7.08%.⁹ Similarly, a study by Darchy *et al.* of 623 patients in Intensive Care Unit showed that 10.9% patients were hospitalized due to iatrogenic/comiogenic illness. In our study, the percent of hospitalization due to comiogenic illness is higher than the mentioned studies (17.3%). Various studies, conducted had confirmed the occurrence of comiogenic illness.¹⁰⁻¹² These illnesses occurred due to care providing personals which could be prevented if certain steps have been followed. Apart from other weaknesses polypharmacy was also one of the major causes of comiogenic illness.^{9,10}

Madeira *et al.* reported various comiogenic cases of different nature and severity of illness but the percentage of illness due infection were higher.¹³ It has confirmed through various studies that most of the comiogenic illnesses are preventable if the preventive measures are taken properly.^{10,14} The absence of competent health care providers like absence of pharmacist or nurse in this health chain will aggravate the situation further.¹⁵ In all studies conducted it was found that the aged individuals are more susceptible to iatrogenic

or comiogenic illness.¹⁶ The key reasons for the induction of iatrogenic diseases is irrational drugs use like polypharmacy, wrong drug selection, drugs-drug interactions, improper diagnose and many other, as the consequences existed in this study.¹³ The unsafe and unsterilized practice of injections is (40%) cause of infectious diseases worldwide. In some countries this trend of unsafe injection use is (70%) and 1.3 million deaths per year globally. The unsafe practice of blood transfusion is (5-15%) infections of HIV.^{17,18}

CONCLUSION

In conclusive remarks, we would say that comiogenic illnesses are at peak due to self-medication, quackery practices and lack of qualified personals (pharmacist) in health care system especially in Pakistan. The health care system should be improved by selective competent personals for the concerned job, time to time training may be arranged to these health care providers. WHO guidelines should be followed and the sayings of William Osler “the key role of the Doctors is to educate the public to not prefer the medicine is an initial choice” shall be followed to prevent iatrogenic illness. It is the prime responsibility of the state to adopt philosophy of “Do no harm” in whole spirit and aware public to avoid self-medication

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Table 1: Comiogenic/ Iatrogenic complications

Causing agents	Drugs	Diseases	Frequency (n)	Percentage (%)
1). Drugs induce (24)	Dexa+dexa	Cushing syndrome	05	14.2
	Triam+ Dexa	Neutropenia	03	8.5
	Piperacillin+ Tazobactam (Tanzo)	Hypothyroidism	03	8.5
	Carbimazole (Neomercaazole)	Hypoglycemia	13	37.1
2). Instrumental induce (Diagnostic procedures) (0)	Insulin	Nil	Nil	Nil
	Nil	Nil	Nil	Nil
3). Parenterals induce				
S.C Insulin (11)	S.C Insulin	Lipodystrophy	11	31.4

*Dexa= Dexamethasone, Triam= Triamcinolone, S.C= Subcutaneous.

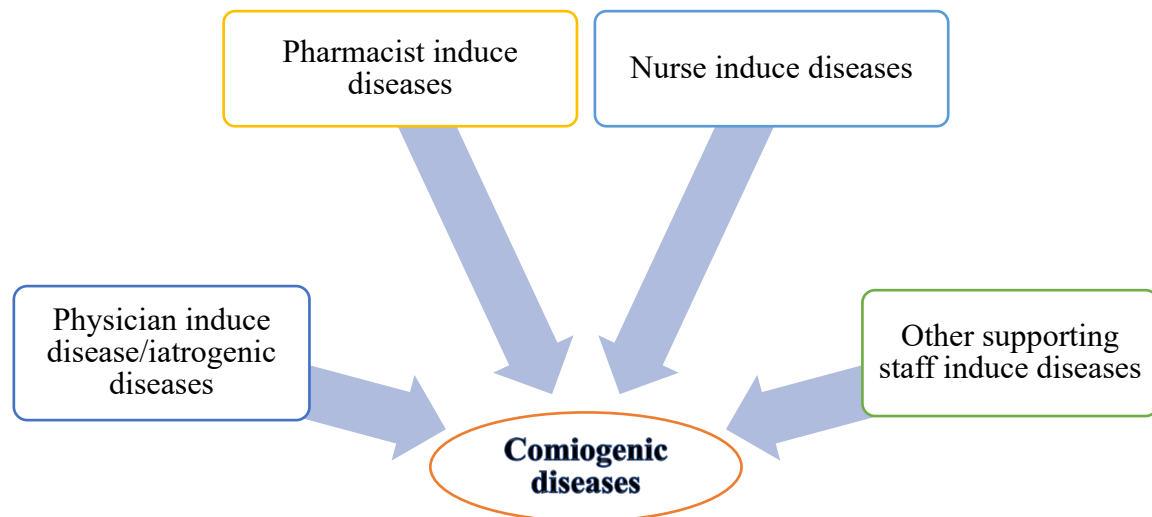


Figure 1: Comiogenic diseases

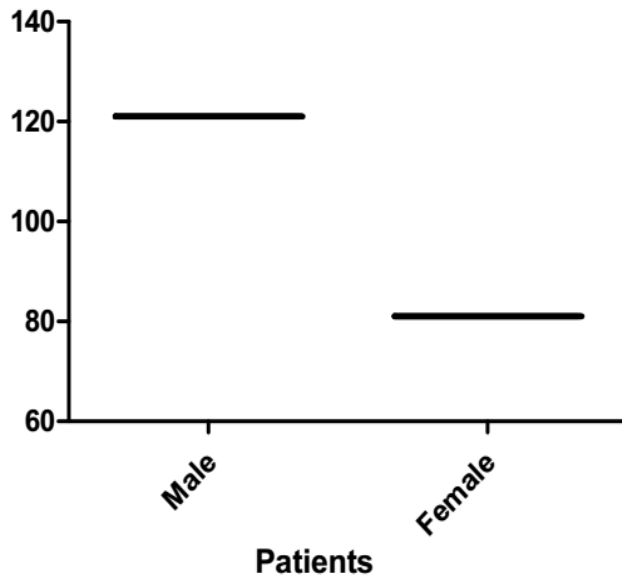


Figure 2: Patients Distribution on gender wise (n=202)

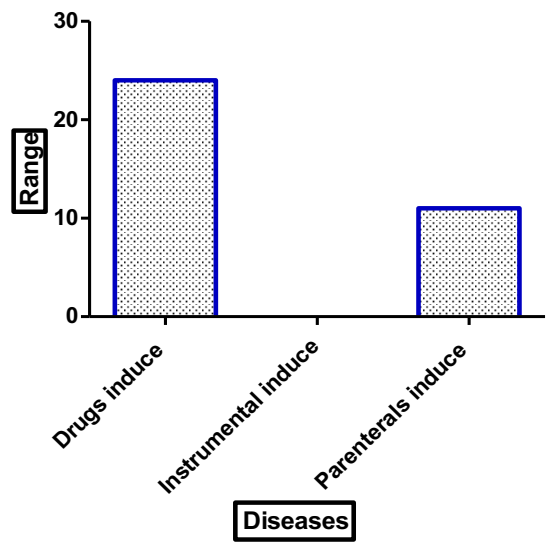


Figure 3: Iatrogenic/comiogenic diseases upon which the patients hospitalized

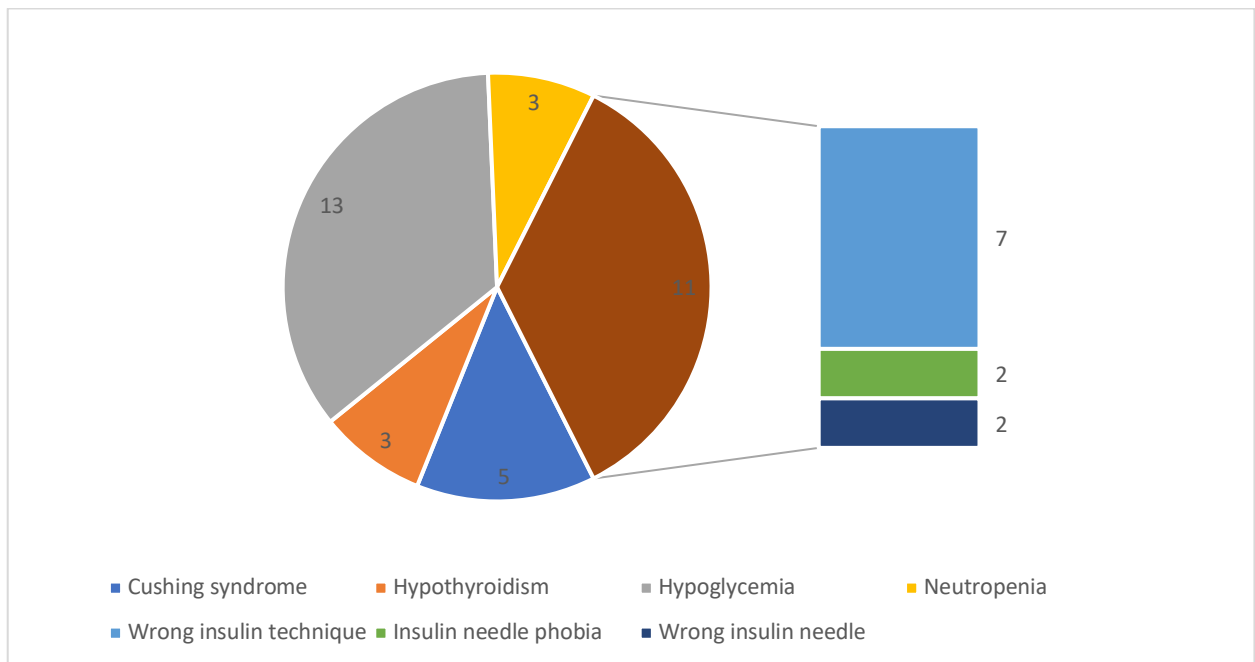


Figure 4: Causes of iatrogenic/comiogenic diseases