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Frequency of Medication Errors in an Emergency Department of Prince Zaid Bin Al Hussien Hospital (RMS), Jordan

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Abstract— Background*: Patient safety is the main concept in the healthcare provision and one of the most important stages in promotion of the safety level of patients is identifying of medication errors and their possible causes. Medical errors such as medication errors are the most predominant errors that threaten health and are a worldwide problem.* ***Methods****: A cross-sectional study will be conducted by reviewing 100 charts of patient visiting an emergency department during the period of 15th July 2019 to 15th Aug 2019, Patient characteristics (age, sex, weight, allergy,) and prescription characteristics (class, dose, frequency, duration) will be evaluated for suitability based on the Drug Information Handbook. Descriptive and analytic statistics will be applied.* ***Results****: Medication errors seen in 100 medical records. 42% and 58% of patients presented were male and female, correspondingly. Total number of prescriptions prescribed for those patients were 137 doses. The prevalence of medication errors found was 51.0 % in the ED, The greatest common errors were prescribing errors (29.1%).* ***Conclusion****: emergency department became a crowded surroundings and underneath staffed with excessive workload ended in excessive prevalence of medicine errors in emergency department.*

I. INTRODUCTION

Medication errors cleared as "miscarriage in the treatment procedure that principal of or has the possible cause to hurt to the patient. [1, 2] Medication errors might possibly arise at one of the five points of medication ordering and supplying including prescription, dispensing, transcription and administration or observing [1,3]. Medication errors happen in 2‑14% of admitted patients and may lead to 44,000‑98,000 yearly deaths in America.[4]. (ED) emergency department is the greatest visited department of a hospital declaring simply patients with serious and frequently life-threatening diseases.[5] Sudden changeable events occurring in associate ED have created this place an setting well-known for its high probable for medication errors; as a substance of reality, nearly 30 % of all unwanted hospital accidents are associated to this section.[6] A great number of patients with difficult diseases looking for medical treatments, therapeutic evidence breaks among them, rapidity and difficulty of medication usage, functioning in under‑employment, heaving situation and in inflexible conditions such as interrupted sleep phases, multiple disruption, acute time limitation and widespread verbal ordering are causative bases for medication mistakes by emergency workers.[3, 7-9] Medication errors degrees have been expected to be amongst 4% and 14% in emergency departments and even greater amongst pediatric emergency departments. [9, 10] A study conducted in England revealed a medication error rate about 15% [11] , A study by Simpson et al. showed that 71% of errors were due to imperfect prescriptions and 29% were due to dose calculation of medications [12], the current study was accomplished to define the frequency and types of medication errors and correlated factors between patients attending to an emergency department in Prince Zaid Bin Al Hussein hospital.

II. METHOD

A cross-sectional study carried out by reviewing a 100 charts of patients seeking an emergency department throughout the period of 15th July to 15th August 2019, Patient characteristics (age, sex, weight, allergy,) and prescription characteristics (class, dose, frequency, duration) were assessed for suitableness supported the drug data reference. Data of patients that are collected were analyzed by SPSS- 20.

The data collection group included three members (two pharmacists and one clinical pharmacist of the hospital). This group disbursed two hours at the first shift per day to gather data for 30 days. Every co-researcher was responsible for 5 beds. The pharmacist's job is to record the patients' records until they ED. The pharmacists listed medication errors into the form that is designed. A medical chart is used for recording demographic medical information for the patient. Stage of errors and association between sex type and age assessed by Chi-Square Tests.

III. RESULTS

Medication errors seen in 100 medical records. 42% and 58% of patients presented were male and female, correspondingly. Total number of prescriptions prescribed for those patients were 137 doses. The incidence of medication errors found was 51.0 % in the ED. No significant variance in the frequency of medication errors between men and women. The study revealed that no association between sex type and phase of errors. Significant difference was found in age means regarding patients with or without medication errors.

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The time between the medication errors was happened and after we described it in almost of the time was nil. Ages between 52 and 70 were most probable to create errors and the utmost public point of errors presented in these ages as prescribing. (71.1%) of errors were documented as completely an error.

Furthermost of the mistakes were made by the doctors (43.5%) and happened in prescribing phase (39.3%).The greatest common errors were prescribing errors (29.1%), Omission Error (17.9%), and finally wrong dose (11.0%), correspondingly.

TABLE 1. Type of errors and frequency

Stage of errors	No. (%) n=173
- Prescribing	68(39.3)
- Administrating	29(16.7)
- Monitoring	0 (0)
Type of Medication Error	
- Wrong dose	19(11.0)
- Wrong Dosage Form	4(2.3)
- Duplication	4(2.3)
- Wrong Admin	1(0.6)
- Wrong Drug	2(1.1)
- Omission Error	31(17.9)
- Wrong Frequency	17(9.8)
- Wrong Time	3(1.7)
- Wrong Route	1(0.6)
- Wrong Monitoring	-
- Known Allergy	-
- Unauthorized	9(5.2)
- Contraindication	2(1.1)
- Interaction	39(22.5)
Total for prescribing	50(29.1)

IV. DISCUSSION

A high percentage of medication errors observed in the emergency department and 173 medication errors observed in about 60 hours of the assessed period. A study by Kohn defined that the ratio of medication errors be not the same between 2%-14% of patients who admitted, with (1–2%) of whole total of patients in United States being affected as a result [4]. Marcin and colleagues informed a medication error prevalence of thirty nine percent in pediatric emergency section [13]. Pham et al. conducted that inferior rate (78.0 reports for each 100,000 visits) was stated [6]. While the prescribing errors be present described the greatest common errors, so we recruit that medication errors happened in emergency department were almost probably due to the incorrect prescribing. This conclusion is reliable with nearly previous studies [6]. Copp and colleagues stated that medication errors commonly (34%) occurred throughout administration in ICU [14]. drug administration error percentage of 3.5% in two surgical , two medical, and two medicines for the old age wards in a previous region general hospital was reported in one study [15]. We establish the highest percentage of error associated to the doctors. This outcome was comparable to prior studies [16]. we concluded that doctors workload be able to be one of the leading risk factors that influence on incidence of medication errors[17]. We come to an agreement with McArdle that doctors must be alert of creating medication errors [17]. We reported the omission mistakes were the second public errors in emergency department. Earlier studies have demonstrated that omission errors have been one of the most now no longer unusual place errors in incredible areas in hospitals along with emergency department [6, 18, 19]. In the current study we conclude that emergency department became a crowded surroundings and beneath staffed with excessive workload ended in excessive prevalence of medicine errors in emergency department.

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