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Discharge Diagnosis vs Emergency Diagnosis, an Retrospective Study

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Abstract

The aim of this study is to investigate the matching between emergency department and discharge diagnosis as well as how investigations affect accurately of emergency department diagnosis. One of the primary consequences of inconsistent diagnosis is the prolongation of hospital stays. The process of diagnosis entails identifying the illness that is the source of a patient's symptoms and warning signs. Investigations, the physical examination, and the history all play a significant role in making a successful initial diagnosis. The study was conducted retrospectively over a seven-month period in 2019 including four in-patient specialties: orthopedics, surgery, and medicine. All patients that entered the emergency room during the study period. The diagnostic accuracy was shown to be considerably higher in the younger age group when the adult patients were divided into groups by age (19-62 years versus 65 years or above, p value less than 0.001). 74% of diagnoses at admission completely or partially matched diagnoses at discharge. Traumatized cases and young people had significantly superior diagnosis accuracy, according to data. Improvements in ED diagnostic definitely needed, particularly for nontrauma situations, young patients, and the elderly. Patient history and clinical examination are the two tools that one may use to increase the accuracy of an ED diagnosis. Diagnoses such as chest illness, hip fracture, and injuries to the finger, leg, or foot were considered partial matches. Simple tests available in the ER were frequently ineffective at improving diagnostic accuracy.

Keywords: Emergency diagnosis; Traumatized cases; ER; investigations

Introduction

The process of diagnosis entails identifying the illness that is the source of a patient's symptoms and warning signs. Investigations, the physical examination, and the history all play a significant role in making a successful initial diagnosis. Investigations were frequently conducted throughout the procedure. The diagnosis determined at the admission time forms the basis of the doctors' initial treatment plan, which also explains why some patients receive several types of care throughout their hospital stay. There are significant clinical, monetary, and legal ramifications in the event of a discrepancy, making it challenging to maintain a high accuracy rate between admission and discharge diagnosis. Inadequate investigations and administrative mistakes are among the factors contributed to

the diagnosis being insufficient at admission time (Chiu et al., 2003). The initial diagnosis for a patient admitted from ED is frequently made based on the patient's entry presentation, clinical examination, and laboratory investigations. Additionally, the original diagnosis might not match the one offered by the doctors who admitted the patient to the ward. As a result, the diagnosis could change while the patient is in the hospital, especially in complicated circumstances, leading to a new discharge diagnosis (McNutt et al., 2012).

The goal of our study was to identify diagnostic discrepancies frequency between hospital discharge and emergency department diagnoses.

Methods

Aprile through October in 2019 were the seven randomly selected months. Retrospective computer data of every patient admitted from the SRV- department to the medical, surgical, and orthopedic departments were examined. This review covered the months of March 2019 to May 2019. It was investigated how specific the ED doctors' provisional diagnoses were. A diagnosis was considered to be precise if it identified a specific disease process affecting one or more distinct organ or structure. For instance, chest discomfort was not thought to be particular although peritonitis was. The degree of agreement between the emergency department diagnosis and discharge diagnosis was used to gauge accuracy. The impacts of age, sex, medical specialization, and the type of ED examination (including X-ray, blood tests, urinalysis with reagent strips, electrocardiography, and ultrasonography) on the accuracy and level of diagnostic matching were evaluated. Version 18 of SPSS was used to process and analyze the data.

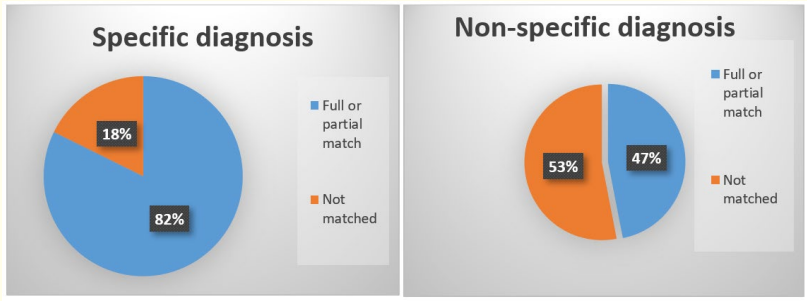
Ethical approval was obtained by SRV all information was kept confidential, no one will have access to data unless the statistician and data processers.

Results

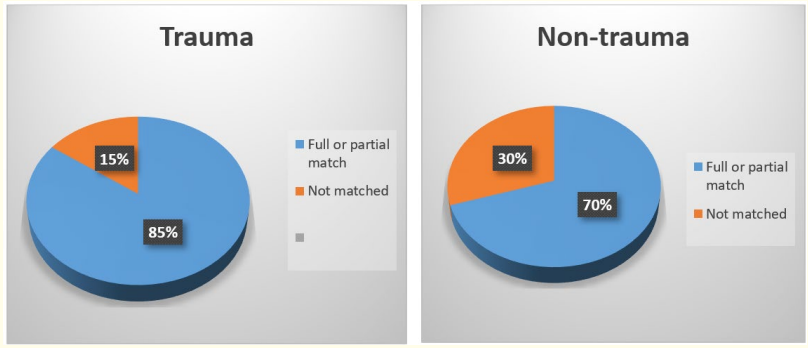
The study had 2258 admissions in total. Ages ranged from under a year to 102 years (mean 49, median 57). The diagnostic accuracy was shown to be considerably higher in the younger age group when the adult patients were divided into groups by age (18-63 years versus 64 years or above, p value less than 0.001). The ratio of men to women was 1.38:1. Males were much younger than females in terms of age (female mean age 53, male mean age 46, p value less than 0.001). Significantly improved specificity and matching were linked to male sex (p value less than 0.001). The medical department was visited by the majority (52.9%). The remainder were admissions to the surgical department (18%), and orthopedic department (12.7%) and rest department was excluded. 54.2% of cases were classified as urgent, while 36.4% were less urgent. Only 10.4% were due to trauma. Among the diagnoses given upon ED admission, 67.7% were specific, and 71.6% were a complete or some match with the diagnoses given at discharge. Another reason for awarding a partial match to an emergency department diagnosis was that ED clinicians occasionally preferred to make an open diagnosis. As a result, diagnoses such as chest illness, hip fracture, and injuries to the finger, leg, or foot were considered partial matches.

If a particular provisional diagnosis was made in the ED, there was a significantly higher chance of having a full or partial match of diagnosis (83.4% versus 46.9%, p0.001). In traumatic situations, the diagnosis' accuracy was statistically higher (85% versus 70.2%, p 0.001).

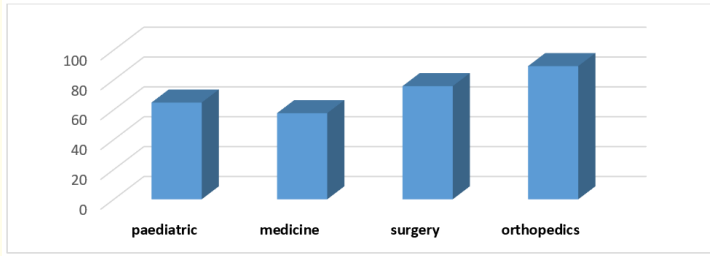
Table 1 displays having blood work done (most commonly a complete blood picture, or CBC) considerably increased the diagnosis' accuracy (p value=0.03). Surprisingly, for medical admissions, those without an ECG or an X-ray had far higher accuracy (p less than 0.001). Blood testing had no significant effect on the matching. There was no discernible difference between patients who underwent ED investigations versus those who did not, for surgical and orthopedic admissions.



Graphic 1: Matching by specificity of emergency department diagnosis (p<0.001).



Graphic 2: Matching between patients with trauma and patients without trauma (p<0.001).



Graphic 3: Accuracy of admission diagnosis in each specialty.

	X RAY	*Blood Inv.*	*Electrocardiography*	*Urine analysis*	*Ultrasound*
Medical	P value 0.001*	Not S.	P value 0.001*	Not S.	Not S.
Surgical	Not S.	P value 0.05	Not S.	Not S.	Not S.
Paediatric	Not S.	Not S.	Not S.	0.05*	Not S.
Orthopedic	Not S.	Not S.	Not S.	Not S.	Not applicable

* Indicate negative effect on diagnosis accuracy Inv. Investigations.

Table 1: Effect of investigations on accuracy of diagnosis.

Discussion

This was the first and largest local investigation on the relationship between hospital discharge diagnosis and emergency department admission diagnosis. In order to ascertain the frequency of missed diagnoses at the emergency department at King Fahd Hospital of the University (KFHU) in Khobar, Saudi Arabia, a retrospective cohort research was conducted there in 2009. According to their analysis, missed diagnoses made up 7% of cases, fully/partially matched diagnoses were 62%, unmatched diagnoses were 11%, and symptoms & unspecific diagnoses made up 18%. Interns encountered a high percentage of fully/partially matched diagnoses (63%) compared to consultants' high percentage of unmatched diagnoses (23%) (El-Mahalli and Mokhtar., 2009).

In examination contrast to X-rays, which negatively affect diagnostic quality in the medicine department, our study indicated that blood investigations increased diagnosis accuracy in emergency surgical situations. Accuracy may also improve as you gain more experience interpreting X-rays. Over-interpretation, which could be caused by a combination of insufficient information gleaned from the patient's medical history and a lack of experience reading X-rays, could be used to explain the current study's findings regarding the potential detrimental effect of X-rays on diagnostic accuracy.

Li et al., 1995 found a diagnosis error rate of only 4%, their study relied on the initiative of the inpatient specialists to get feedback. The current study may act as a motivating point for future investigations into the accuracy of emergency department diagnoses, clinical audits, or other quality assurance activities. Overall, especially in the orthopaedic speciality, the level of specificity and matching attained was satisfactory. The specific requirements and diagnostic quirks of emergency problems in elderly people should be covered in emergency medicine training, as some writers have noted (Kizer and Vassar, 1998); McNamara et al., 1992).

Patient history and clinical examination are the two tools that one may use to increase the accuracy of an ED diagnosis because straightforward investigations like X-rays, bedside urinalysis, electrocardiography, and blood tests are not that helpful in doing so.

Conclusion

Better training in indicators and interpretations is necessary because it was discovered that the straightforward investigations offered at emergency departments were useless and even misleading. Improvements in ED diagnostic accuracy are definitely needed, particularly for nontrauma situations, young patients, and the elderly The most crucial and fruitful diagnostic methods for emergency physicians continue to be the patient history and clinical examination parts of good clinical evaluation approaches.

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