



Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/16907

DOI URL: <http://dx.doi.org/10.21474/IJAR01/16907>



RESEARCH ARTICLE

COMPARISON BETWEEN PROVISIONAL DIAGNOSIS MADE IN EMERGENCY DEPARTMENT VS FINAL DISCHARGE DIAGNOSIS AT RAMKRISHNA CARE HOSPITAL, RAIPUR C.G

Dr. Aishwarya Nandy, Dr. Santosh Singh and Dr. Uvesh Vaja

Manuscript Info

Manuscript History

Received: 15 March 2023

Final Accepted: 18 April 2023

Published: May 2023

Key words:-

PD: Provisional Diagnosis, ED: Emergency Department, FD: Final Diagnosis, ER: Emergency Room

Abstract

Objective/Hypothesis: Objective of this study was to find out the diagnostic accuracy made by emergency physician, this will ensure improvement in patients care and Will help to implement better accuracy in determining diagnostic accuracy.

Background: Department of emergency medicine is a specialized care facility in tertiary health care centre whose main function is to take care of patients with immediate and emergent health issues. In view limited literature in EM in India a study between PD vs FD was performed for future reference in continuous quality improvement.

Methods: A prospective, observational study was done among 200 patients between provisional diagnosis made in emergency department vs final discharge diagnosis.

Results: Majority of the patients (n=153, 76.5%) were from the age group of patients between 15-64 followed by (n=40, 20%) in the age group with patients of >65 years age, followed by (n=7, 3.5%) in the age group of 1-14 years. Most patients were from department of internal medicine (18.5%) followed by department of cardiology (16%), followed by department of neuromedicine (13%). It was found that 81% (n=162) cases were accurately (matched) diagnosed during Emergency department admission, while there was unmatched diagnosis of 19% cases (n=38).

Conclusion: Result obtained suggests that the provisional diagnosis was made by the emergency physicians were mostly matched with final discharge diagnosis that was made by the concerned specialist doctors. This shows that the choice of treatment done in the ER were a prompt and accurate treatment. This has a positive effect on the prognosis, mortality and outcome in patients. Department of internal medicine had more diagnostic errors. Improving history taking of patients with proper clinical evaluation will improve diagnosing patients in the ER. Early availability in blood reports during emergency stay will help as a better diagnostic interpretation of disease. It is required to upgrade clinical skills of emergency physicians in diagnosing pediatric age group.

Copy Right, IJAR, 2023. All rights reserved.

Corresponding Author:- Dr. Aishwarya Nandy

Introduction:-

The Emergency Room (ER) is a very sensitive and very critical unit in any hospital requiring immediate skilled physicians attention to prevent any delay in treatment and recognition of any life threatening disease. The ER is the point of first contact in any hospital for patients with emergent health issues and concerns [1]. Emergency department is required to save life the first few minutes to hours which is very crucial and determinant of patients well-being and for better clinical outcome.

Every patient has a new unexpected problem and diagnosis is not known in most of the patients, hence it's a clinical challenge. Before the introduction of Emergency Department as a speciality, acutely ill patients in casualty were managed by medical officers (MO) and there was no dedicated attending specialist [2].

Casualty meant seriously injured patient. It was a military word, which was used for accidents after a battle, the dead, the wounded, and the sick together known as "casualties". Sir Harry Platt, the chairman of the Accident and Emergency Services Sub-Committee of the Standing Medical Advisory Committee, produced the famous report in 1962 stating the name "casualty" should be altered to "Accident and Emergency"[3] which later drew their attention for the need for trained doctors with good clinical skills and knowledge all over the world to provide the highest quality of emergency care to reduce the increasing death rate from injuries[4].

David pioneered the practice of emergency medicine in India and founded the first emergency department in Christian Medical College (CMC) in Vellore in the year 1994. Later in the same year, The Sundaram Medical Foundation (SMF) established the first ED in the private sector. Modeled on the American community hospital emergency system, and was supported by the Long Island Jewish Medical Center. In 2009 Emergency department was formally recognized as an independent speciality by the Medical Council of India (MCI), and since that time EM training programs have been initiated in both public and private hospitals. It is a rapidly evolving field in India and its expertise is mainly utilized in tertiary care hospitals in most of the bigger cities.

The need for diagnostic accuracy in critically ill patients may determine life or death, it affects patients care, the prognosis of the patients, financial and legal implications. It indirectly reduces the revisit to ED and thus reduces the burden to the health sectors. Early and accurate diagnosis improves positive clinical outcome and reduces the length of stay in hospital. Studies in India regarding the comparison of admission diagnosis made in an Emergency Department and final outcome diagnosis are limited[5,6]. Our aim of this study is to compare the diagnosis made in ER and the diagnosis made during discharge i.e. "provisional vs final" diagnosis as it will help to evaluate current performance of specialist emergency doctors and improve quality of care provided to patients.

High degree of precision in diagnosis of a patient at the earliest will lead to reduction in number of investigations which in turn will reduce cost and reduce burden to the health care system [7]. A study conducted by Hussain et al. stated that 15% of diagnostic errors, including wrong and delayed diagnoses resulted in severe harm to patient or death.^[8]

Diagnosing a patient accurately in the emergency department is utmost important in effective management and it influences the outcome of a patient. Despite our advances in health-care systems and established medical facilities in developed countries, errors in diagnosing patients in the emergency department have been found as the important factor for where patients expired. Other studies conducted on diagnostic discrepancies between emergency diagnosis and discharge diagnosis have found variable results ranging from 3% to 52% discrepancy in diagnosis[9].

Study carried out by McNutt et al. found that the average length of days stayed in hospital was significantly increased in patients in the not matched diagnosis group, an average of almost 1.90 days increased in length of hospital stay in comparison with matched diagnosis ($P < 0.001$) [10].

Better application of knowledge along with continuous academic updates with its application of clinical skills including history, physical examination and correlating them is important to reduce the diagnostic variation between provisional diagnosis made in the emergency department and in turn it will reduce consequences. Our present study was done at a single tertiary care center. It has established a department of emergency medicine, which included trained emergency medicine specialists and the necessary equipment's which is required to provide the best possible care to acute patients in the ER.

Aims and Objectives:-

- 1) Our aim of this study is to conduct a prospective observational study between provisional diagnosis made in emergency department in comparison with final diagnosis made at the time of discharge in all patients in a single centred tertiary healthcare of Raipur
- 2) It will help to identify the extent of gaps at the context of knowledge , practice and systems
- 3) For determining the diagnostic accuracy of emergency medicine department
- 4) Our study will help in improvement and to implement better accuracy in determining accurate diagnosis . As an accurate choice of treatment in the ER is very important in cases where a prompt initiation of treatment has a vital effect on the prognosis and outcome
- 4) To produce necessary intervention and take measures towards reducing gaps.
- 5)For Feedback to ED regarding diagnostic accuracy , treatment , effectiveness , or Morbidity or the mortality of the patients .

Review of Literature:-

Hospitals is a complex buildings and it provides health care services 24 hours in a day. Emergency department is the most important department of a hospital . It provides emergency services 7 days week and 24 hours a day, to reach and provide medical facility to all emergency or non-emergency patients. It play a very important role in managing disaster situations and mass casualties also.

Patient management in the Emergency department starts with the assessment of patient on priority basis, depending on the urgency for need of treatment , known as Triage. It rapidly screens the patients who require immediate emergency treatment . According to the patient's clinical severity the triage is divided into divided into Red I.e emergency , Yellow Zone I.e priority and Green I.e non urgent .In Emergency , Management of the patients always precedes diagnosing them ,as this can lead to further destabilisation of patients and increase in mortality. This approach is done in emergency room [11].

Every patient has a new unexpected problem and Diagnosis is not known in most of the patients, and its a clinical challenge. Where an emergency physician is required to save life of patient in the first few minutes to hours. It is is a very crucial and determinant factor of patients well-being and its better clinical outcome.

Although management of acute ill patients in emergency department is important but it is an utmost need to diagnosis these patient accurately in emergency department . As Some of these patients because of the an incorrect diagnosis suffers adverse event (amounting to ~2.0%), and ~0.3% are of serious nature. It was a research conducted by Agency for Healthcare Research and Quality Evidence-based Practice Center Program Methods Guidance [13]

It is Most often found that an Unscheduled returns to hospital is associated with medical errors in treatment of patients , follow up care of them, or inadequate information. It leads to Patients dissatisfaction and is often associated with medical errors, or in level of triaging . Often patient educational level and its time in emergency department are modifiable factors .[14]

Fariz Hussain et al in his study stated that modifications are needed that provide clinicians with better support in assessing the patients and in investigation interpretation of investigation done .standardising the checklists, with early reporting of investigation will improve patient care. And it will help in accurately diagnosing them [15] . He conducted the study on diagnostic errors in emergency department. Total of 2288 cases , 1973 (86%) delayed and 315 (14%) wrong diagnoses.

Chiu et al. in his study stated that while comparing the provisional diagnosis made in emergency department , 71.4% of all matched diagnosis is similar with the final discharge diagnoses . The accuracy for diagnosing traumatic cases was statistically better , in male and in young adults.[16]

Goh et al. in his study reported that a high degree of accuracy was obtained in diagnosis the surgical patients (82.9% of them from general surgery, and 95.8% are from the orthopaedic surgery), and they obtained acceptable degree of accuracy i.e (77.6%) for general medicine patients .[15]

Pope et al. found That the percentage of patients who had presented to the emergency room with an acute unstable angina or myocardial infarction most of such patients were hospitalized , but such patients discharge was associated with greater mortality rates.Diagnoses that is missed in cardiac specialty are fatal . It should be reduced. Pope et al conducted his study on total of 10,689 patients who had presented to ER with history of chest pain, 8% of them was diagnosed acute myocardial infarction, 9% with unstable angina, 6% with stable angina, 21% with other cardiac problems, and 55% with non-cardiac issues. Out 889 patients with a diagnosis of acute myocardial infarction, 19 patients I.e (2.1%) were discharged from the emergency department by mistake (95 percent confidence interval, 1.1 to 3.1%); similarly, 966 patients had an unstable angina, in which 22 patients I.e (2.3%) were mistakenly discharged (95 percent confidence interval, 1.3 to 3.2% .For patients who had acute infarction, mortality ratio increased who were not admitted , in comparison to those who were, was 1.9 I.e (95 percent of confidence interval, 0.7 to 5.2), and with the patients of unstable angina, it was 1.7.i.e (95 percent confidence interval, 0.2 to 17.0).[17]

R U kothara et al. Conducted a study in 446 patients and they were evaluated in the department of emergency . In which 76 patients had diagnosis of intracerebral or subarachnoid hemorrhage . The diagnosis was correctly made by the emergency physicians (showing sensitivity, 100%; with positive predictive value of 100%). And 351patients had diagnosis of ischemic stroke or TIA, in which 346 patients were correctly diagnosed by the emergency physicians (showing sensitivity of 98.6%; positive predictive value of 94.8%). Nineteen patients who were diagnosed as stroke or transient ischemic attack but they had a final diagnosis other than the stroke. Suggestive of achieving higher accuracy in diagnosing CVA , neurological emergencies unto 98%.[18]

Priyanka patel et al . conducted a study on 3000 patients .In which 81% I.e 2430 number of patients that was diagnosed in emergency department was found to be same as the discharge diagnoses, and this concordance of diagnosis was found to be statistically significant.

Maximum number of patients that was diagnosed correctly were from the Internal Medicine Department of i.e 10.6% followed by Department of General Surgery i.e 8.7%.

They observed had the most errors were seen in diagnosing patients were from department of Gastroenterology (number of patients were 152 i.e 40%) followed by those who patients who were admitted in the Department of Urology (number of patients were 115 i.e 23.47%).

And The departments with the least unmatched diagnoses were from cardiology (number of patients were 156 i.e 9.61%), Internal medicine(n=317;10.09%) Endocrinology (n=79;13.92%) followed by CTVS (n=49,14.28%). [19]

Materials and Methods:-

Study area

The study was conducted at Ramkrishna care Hospital, Raipur, Chhattisgarh, India.

Which is 359 bedded tertiary hospital , It has a well established Emergency department. In this centre, patient care is provided by dedicated emergency medicine physicians, consultants and senior emergency residents. Our study included All the patients who were admitted through emergency department .

Study population

It is important to identify the population from which the data is collected. For our thesis we have collected the data from all the patients admitting through emergency department of Ramkrishna care hospital. We have included patient of different age groups i.e. Paediatric, Adult and Geriatric, and both male and female.

All patients were selected by method of simple random sampling . With the total of 200 consecutive consenting patients were taken for our study.

Inclusion criteria

1) Patients from all the age group admitted through emergency department to hospital have been included and have been classified in paediatric, adult and geriatric, where ages between 0-14 years of age are classified as paediatrics more than 14 and upto 64 years as adults and more than 64 years as geriatric.

Groups	Ages	Total
Pediatric	0 to 14 years	7

Adult	More than 15 upto 64 years	153
Geriatrics	More than 65 years	40

Exclusion criteria

- 1) All the patients who arrived in emergency room in dead on arrival state are excluded
- 2) All patients who were treated in OPD basis.
- 3) All patients who already have been diagnosed on OPD basis or other hospital or referred after the diagnosis.
- 4) All patients who went discharge against medical advice after getting admitted to the hospital.
- 5) Previously diagnosed oncology patients presenting with an oncological emergencies.

Study design

The author proposes to conduct a prospective, observational study between provisional diagnosis made in emergency department vs final discharge diagnosis after obtaining the institutional ethical committee clearance.

It is single centric study and It is conducted in Ramkrishna care hospital, Raipur Chhattisgarh in the period of 2 years i.e July 2021 to July 2023

Our focus of study is to analyse the level performance of emergency room by doctors and to improve the patient care .

To create awareness about role of emergency physicians in early diagnosis and prompt treatment which in turn can reduce mortality significantly .

Written and informed consent was taken from the patients prior to the study.

Study period

The study was carried out over a period of 2 years from July 2021 to July 2023 .

Sample size calculation

Sample size calculated by using Cochran formula

$$n_0 = \frac{Z^2 pq}{e^2}$$

With 95% of confidence level (z)with +/- 5%of precision (e)

Where by:

N= minimum sample needed

p= population proportion 88.6%= 0.886

e= margin of error (0.05)

z= 1.96 value for significance level

Substituting these figures in formula

Minimum Sample Size

$$N = \frac{1.96^2 * P * (1-P)}{e^2} = \frac{1.96^2 * 0.886 * (1-0.886)}{(0.05)^2}$$

=156 cases

There minimum required sample size was 156 patients

Statistical analysis

The data will be entered in MS EXCEL spreadsheet and analysis will be done using Statistical Package for Social Sciences (SPSS) version 20.0.. Continuous variables will be presented as mean ± SD, and categorical variables will be presented as absolute numbers and percentage. Data will be checked for normality before statistical analysis. Comparison of mean for normally distributed continuous variables will be compared using the unpaired t test,

whereas the Mann-Whitney U test will be used for those variables that will not be normally distributed. Categorical variables will be analysed using either the chi square test or Fisher's exact test.

Statistical significance

P>0.05 is not significant

P<0.05 is significant

P<0.01 is highly significant

The Arithmetic Mean

The most widely used measure of central tendency is arithmetic mean, usually referred to simply as the mean, calculated as

$$\text{Mean}_x = \frac{\sum Xi}{N}$$

The Standard Deviation

The standard deviation (SD) is the positive square root of the variance, and calculated as

$$SD = \sqrt{\frac{\sum (X - \text{MEAN})^2}{N-1}}$$

where, n= no. of observation

Chi square test

Chi square value= $\sum \frac{(O-E)^2}{E}$, degree of freedom= (r-1)(c-1)

$$\sum \frac{(O-E)^2}{E}$$

O= observed frequency

E= expected frequency

Methodology:-

The patients were admitted from the Emergency Department and they were primarily being diagnosed by an Emergency medicine specialist during study period i.e July 2021 to July 2023. Emergency Room diagnoses and the final discharge diagnoses of various, gender, different age groups and various specialties, were included. Patients were selected by simple random sampling method.

Patients upon the initial assessment, Detailed History taking and investigations that was carried on to make a provisional diagnosis was made by Emergency specialist, the patients were then admitted to specific speciality after stabilisation them. All these Patients were admitted under the speciality depending on the specific nature of their current illness.

In a very limited time and on the basis of examination, history taking, basic investigations that is required at the utmost is done and depending on it a provisional diagnoses made by Emergency physicians. Hence it is a clinical challenge to stabilise the patient, work the diagnosis within limited time frame and to deal with the anxious relatives at the same time.

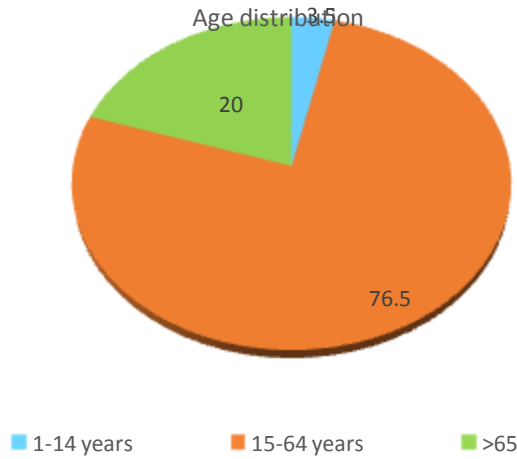
Results and Analysis:-

Descriptive tables

Epidemiological Parameters

Table 1A:- Distribution of patients according to Age.

Age group (years)	N	%
1-14 years	7	3.5
15-64 years	153	76.5
>65 years	40	20
Total	200	100

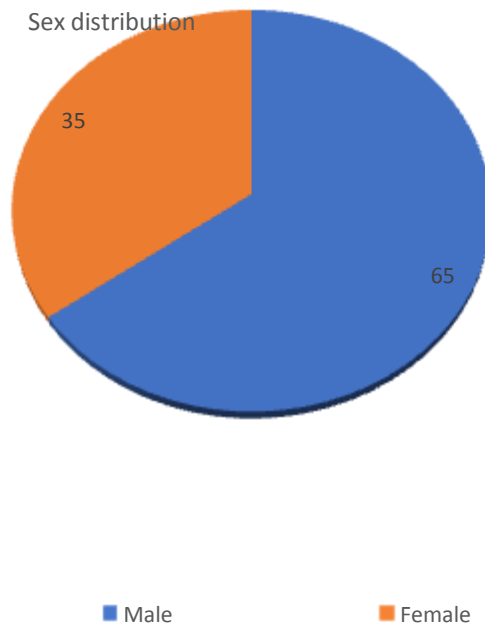


The age of the subject varied from 3 years to 95 years (mean=48.13 median 50) . The subjects were divided into 3 groups i.e 1-14 , 15-64 and >65 years . Majority of the patients (n=153 , 76.5%) were from the age group of patients between 15-64 followed by (n=40 , 20%) in the age group with patients of >65 years age , followed by (n= 7 , 3.5%) in the age group of 1-14 years .

Table 1B:- Distribution of patients according to Sex.

Sex distribution	N	%
Male	130	65
Female	70	35
Total	200	100

The number of male patients (n = 130 , 65%) while female patients constituted (n=70 , 35%)in our study group.

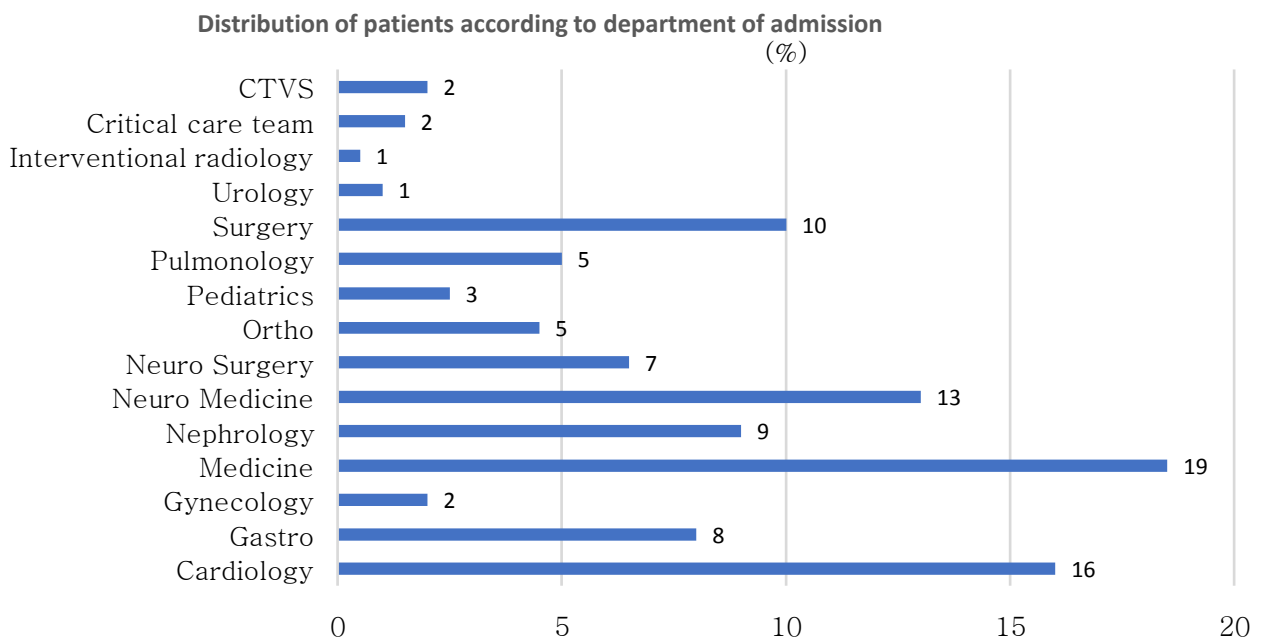


Study Specific Findings

Table 2:- Distribution of patients according to department of admission.

Department	N	%
Cardiology	32	16
Gastroenterology	16	8

Gynecology	4	2
Internal Medicine	37	18.5
Nephrology	18	9
Neuro Medicine	26	13
Neuro Surgery	13	6.5
Orthopedic	9	4.5
Pediatrics	5	2.5
Pulmonology	10	5
General Surgery	20	10
Urology	2	1
Interventional radiology	1	0.5
Critical care team	3	1.5
CTVS	4	2
Total	200	100



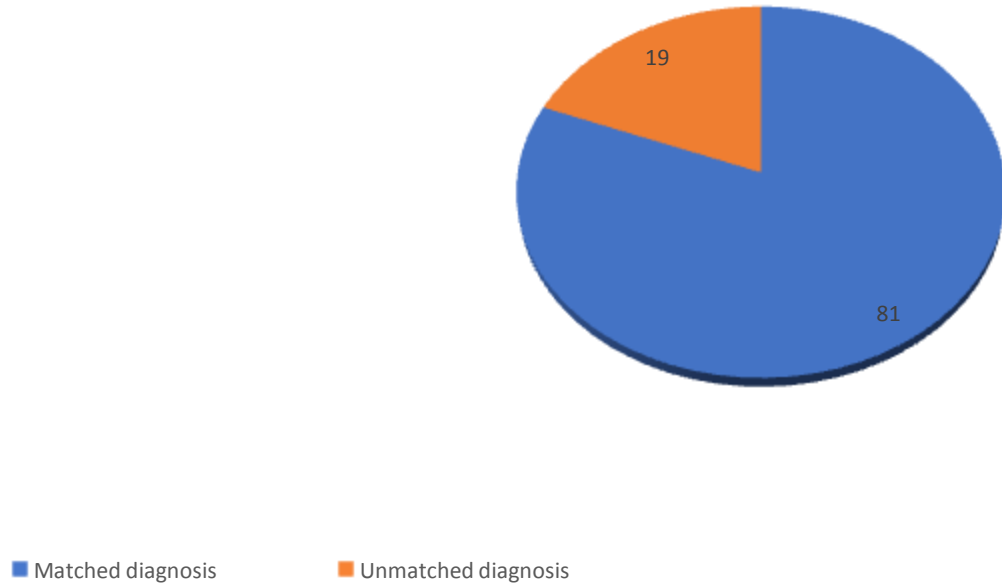
It is characterised in table 3 ,that most of the patients were from department of internal medicine (18.5%) followed by department of cardiology (16%) , followed by department of neuromedicine (13%).

Table 3:- Diagnostic Accuracy between provisional diagnosis made in emergency department vs final diagnosis.

Agreement	N	%
Matched diagnosis	162	81
Unmatched diagnosis	38	19
Total	200	100

Comparison between provisional diagnosis versus final diagnosis was performed in above table no. 3 it was found that 81% (n=162) cases were accurately (matched) diagnosed during Emergency department admission , while there was unmatched diagnosis of 19% cases (n=38).

Diagnostic Accuracy between provisional diagnosis made in emergency department vs final diagnosis



Inferential stats

Table 4:- Association of age group and Diagnostic Accuracy of provisional diagnosis.

Age group (Years)	Matched		Unmatched		P value
	N	%	N	%	
1-14 years	5	71.43	2	28.57	0.51 NS
15-64 years	123	80.39	30	19.61	0.69 NS
>65 years	34	85	6	15	0.47 NS

P value is insignificant with age group bcoz all 3 age groups are having high matched %

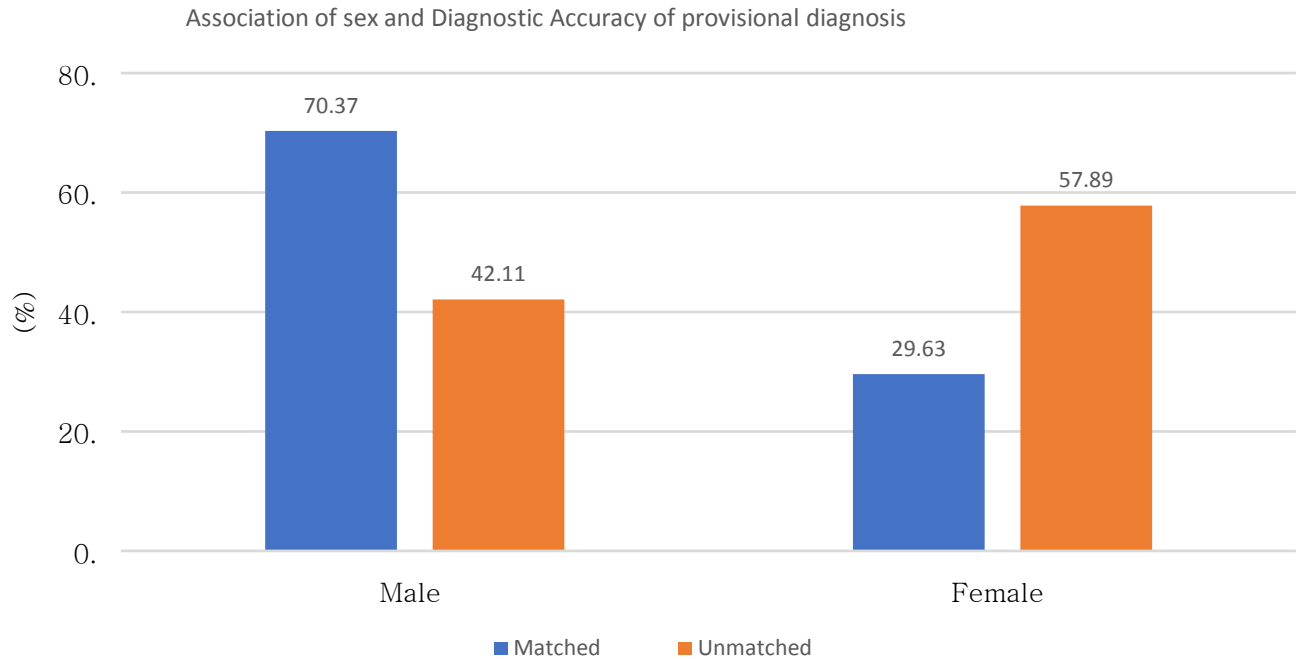
No significant association between age group and diagnostic accuracy of provisional diagnosis

It was observed that more errors in diagnosis were seen with age group of 1-14 years (n=2,28.57%) as compared with age of 15-64 years (n=30 ,19.61%) and in age group of >65 years (n=6 ,15%)

Table 5:- Association of sex and Diagnostic Accuracy of provisional diagnosis.

Sex distribution	Matched		Unmatched		P value
	N	%	N	%	
Male	114	70.37	16	42.11	0.001 HS
Female	48	29.63	22	57.89	
Total	162	100	38	100	

Highly significant association between sex distribution and diagnostic accuracy of provisional diagnosis



As shown in above table no. 5

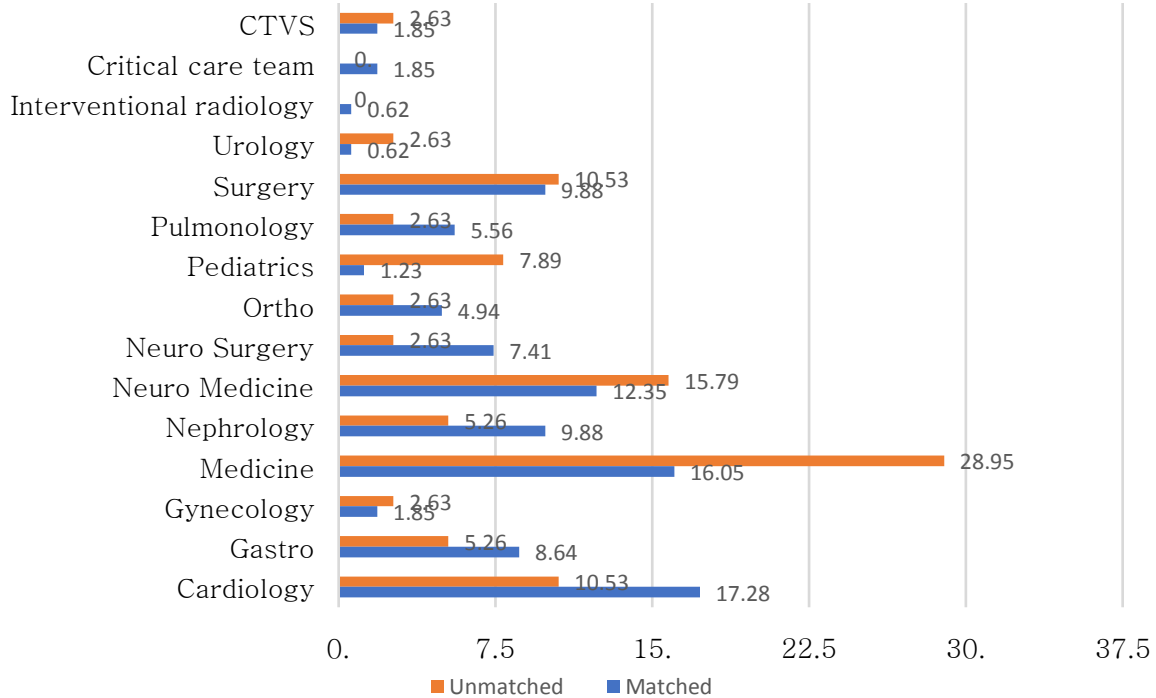
It was observed that more errors in diagnosis were seen in female patients (n=22,57.89%) was compared to male patients (n=16,42.11%).

Table 6:- Association of department of admission and Diagnostic Accuracy of provisional diagnosis.

Department of admission	Matched		Unmatched		P value
	N	%	N	%	
Cardiology	28	17.28	4	10.53	0.30 NS
Gastro	14	8.64	2	5.26	0.49 NS
Gynecology	3	1.85	1	2.63	0.76 NS
Medicine	26	16.05	11	28.95	0.06 NS
Nephrology	16	9.88	2	5.26	0.37 NS
Neuro Medicine	20	12.35	6	15.79	0.57 NS
Neuro Surgery	12	7.41	1	2.63	0.28 NS
Ortho	8	4.94	1	2.63	0.54 NS
Pediatrics	2	1.23	3	7.89	0.018 S
Pulmonology	9	5.56	1	2.63	0.45 NS
Surgery	16	9.88	4	10.53	0.90 NS
Urology	1	0.62	1	2.63	0.26 NS
Interventional radiology	1	0.62	0	0	0.63 NS
Critical care team	3	1.85	0	0	0.40 NS

CTVS	3	1.85	1	2.63	0.76 NS
Total	162	100	38	100	

Association of department of admission and Diagnostic Accuracy of provisional diagnosis



It was observed that more that more error in diagnosis were seen in patients admitted to the department of medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6,15.79%) The department showing least unmatched diagnosis were ,from critical care (n= 1, 23.63%) , interventional radiology(n=0 , 0%) , pulmonology (n=1 , 2.63%) followed by gynaecology (n=1, 2.63%), neurosurgery (n=1,2.63%) ,orthopadic (n=1, 2.63%) , urology (n=1,2.63%) and CTVS (n=1 , 2.63%).

Discussion:-

As previously stated ER is the point of first contact in any hospital for patients with emergent health issues and concerns [1] As soon as the patients enter we start with the assessment of patient on priority basis, depending upon the urgency for need of treatment , this is known as Triaging the patients. It rapidly screens the patients who require immediate emergency treatment . According to the patient’s clinical severity the triage is divided into divided into Red I.e emergency , Yellow Zone I.e priority and Green I.e non urgent .In Emergency , Management of the patients always precedes diagnosing them ,as this can lead to further destabilisation of patients and increase in mortality. The need for accurate diagnosis in critically ill patients with immediate prompt treatment may determine life or death . It affects patients care, the prognosis of the patients, financial as well as legal implications. Accurately understanding the illness and promptly treating them indirectly reduces the revisits of the patients to ED and thus reducing burden to the health sectors . Early and accurate diagnosis improves positive clinical outcome and reduces the length of stay in hospital .

Despite its importance ,Studies in India regarding the comparison of admission diagnosis made in an Emergency Department and final outcome diagnosis are very limited[5,6]. Our study is conducted at the state of chattisgarh , it is fastest developing state in central India , With roughly 30 millions population . There is no other study conducted on comparison between PD vs FD in state of chattisgarh .

We did study on 200 patients, out of them majority of the patients were between the age group of 15-64 followed by patients of >65 years of age followed by age group of 1-14 years. Out of this male patients were 130 (65%) and female patients were 70 (35%). In our study most of the patients were from department of internal medicine (18.5%) followed by department of cardiology (16%) followed by department of neuromedicine (13%).

In our study accuracy of matched vs. Unmatched diagnosis was that of 81%. (n=162) were accurately matched diagnosis during emergency medicine admission, while there was unmatched diagnosis of 19% Cases(n=38).

It was observed that more errors in diagnosis were seen with the age group of 1-14 years(n=2,28.57%) as compared with the age group of 15-64 years(n=30, 19.61%) and in age group of >65%(n=6, 15%). It was observed that more errors in diagnosis were seen in female patients (n=22, 57.89%) as compared with male patients (n=16, 42.11%).

In our study it was observed that more errors were seen that more error in diagnosis were seen in patients admitted to the department of medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6,15.79%) The department showing least unmatched diagnosis were from critical care (n= 1, 23.63%), interventional radiology(n=0, 0%), pulmonology (n=1, 2.63%) followed by gynaecology (n=1, 2.63%), neurosurgery (n=1,2.63%), orthopaedic (n=1, 2.63%), urology (n=1,2.63%) and CTVS (n=1, 2.63%).

Fariz Hussain et al in his study on diagnostic errors in emergency department. Total of 2288 cases, 1973 (86%) delayed and 315 (14%) wrong diagnoses.

In our study we found that there was unmatched or wrong diagnosis of 19% cases (number of patients =38) in total of 200 cases.

Chiu et al. in his study stated that while comparing the provisional diagnosis made in emergency department, 71.4% of all the matched diagnosis is similar with the final discharge diagnoses. The accuracy for diagnosing traumatic cases was statistically better, in male and in young adults.[16]

Where as In our study accuracy of matched vs. Unmatched diagnosis was that of 81%. (n=162) were accurately matched diagnosis during emergency medicine admission, while there was unmatched diagnosis of 19% Cases(n=38). Majority of the patients with matched diagnosis were between the age group of 15-64. And most of the patients were male i.e 130 (65%) was accurately matched.

Goh et al. in his study reported that a high degree of accuracy was obtained in diagnosis the surgical patients (82.9% of them from general surgery, and 95.8% are from the orthopaedic surgery), and they obtained acceptable degree of accuracy i.e (77.6%) for general medicine patients.[15]

In our study it was observed that most of the patients with matched diagnosis were from department of cardiology (17.28%) followed by department of internal medicine (16.05%), followed by department of neuromedicine (12.35%).

Priyanka patel et al. conducted a study on 3000 patients. In which 81% i.e 2430 number of patients that was diagnosed in emergency department was found to be same as the discharge diagnoses, and this concordance of diagnosis was found to be statistically significant.

Maximum number of patients that was diagnosed correctly were from the Internal Medicine Department of i.e 10.6% followed by Department of General Surgery i.e 8.7%.

They observed had the most errors were seen in diagnosing patients were from department of Gastroenterology (number of patients were 152 i.e 40%) followed by those who patients who were admitted in the Department of Urology (number of patients were 115 i.e 23.47%).

And The departments with the least unmatched diagnoses were from cardiology (number of patients were 156 i.e 9.61%), Internal medicine(n=317;10.09%) Endocrinology (n=79;13.92%) followed by CTVS (n=49,14.28%). [19]

Our study was conducted in 200. Patients accurately matched was that of 81%. (n=162) with provisional diagnosis during emergency medicine admission, while there Was unmatched diagnosis of 19% Cases(n=38). Maximum number of patients diagnosed correctly were from department of cardiology (17.28%) followed by department of internal medicine (16.05%) followed by department of neuromedicine (12.35%). We observed that more errors were seen in diagnosing patients admitted to the department of internal medicine (n=11, 28.95%) followed by those admitted to department of neuromedicine (n=6,15.79%) The department showing least unmatched diagnosis were ,from critical care (n= 1, 23.63%) , interventional radiologyb(n=0 , 0%) , pulmonology (n=1 , 2.63%) followed by gynaecology (n=1, 2.63%), neurosurgery (n=1,2.63%) ,orthopadic (n=1, 2.63%) , urology (n=1,2.63%) and CTVS (n=1 , 2.63%).

Summary and Conclusion:-

As per our study conducted at Ramkrishna Care hospital , Raipur , Result obtained suggests that the provisional diagnosis was made by the emergency physicians were mostly matched with final discharge diagnosis that was made by the concerned specialist doctors. This shows that the choice of treatment done in the ER were a prompt and accurate treatment . This has a positive effect on the prognosis , mortality and outcome in patients.

It also draws our attention for the need of improvement in diagnosing patients admitting to department of internal medicine as more errors were seen in patients admitted to the department of medicine. Taking adequate history of patients and a proper clinical evaluation by assessing primary and secondary survey is important to reach correct diagnosis in the ER. Early availability in blood reports during emergency stay will help as a better diagnostic interpretation of disease. It is evident from above study that more errors in diagnosing paediatric age were seen and it require to upgrade clinical skills of emergency physicians in diagnosing paediatric age group .

Limitations Of Study

- 1) The Sample size was low
- 2) The study was carried out in a tertiary care hospital, so hospital bias cannot be ruled out.
- 3) Single centric study
- 4) Non unavailability of blood reports during emergency stay causing mismatched in provisional diagnosis vs final diagnosis .

References:-

1. Sharma M, Brandler ES. Emergency medical services in India: the present and future. *Prehosp Disaster Med.* 2014;29(3):307–10. doi:10.1017/S1049023X14000296.
2. Rahman NH, Holliman CJ. Emergency medicine in Malaysia. *Hong Kong Journal of Emergency Medicine.* 2005 Oct;12(4):246-51.
3. Platt H. Report Of The Standing Medical Advisory Committee, Accident And Emergency Services. London: HMSO, 1962
4. Kirsch TD. Emergency medicine around the world. *Ann Emerg Med* 1998;32:237–8.
5. Widgren BR, Jourak M. Medical Emergency Triage and Treatment System (METTS): a new protocol in primary triage and secondary priority decision in emergency medicine. *J Emerg Med.* 2011;40(6):623–8. doi:10.1016/j.jemermed.2008.04.003.
7. Eames J, Eisenman A, Schuster RJ. Disagreement between emergency department admission diagnosis and hospital discharge diagnosis: mortality and morbidity. *Diagnosis.* 2016 Mar 1;3(1):23-30.
8. Chattopadhyay A, Ghosh R, Das T, Chakroborty A, Paul S, Lahiri SK. Gap analysis between provisional diagnosis on admission and final diagnosis during discharge – A comparative study. *IOSR J Dent Med Sci* 2013;8:28-31.6.
9. Hussain F, Cooper A, Carson-Stevens A, Donaldson L, Hibbert P, Hughes T, et al. Diagnostic error in the emergency department: Learning from national patient safety incident report analysis. *BMC Emerg Med* 2019;19:77.
10. Chatterjee S, Ray K, Das AK. Gap analysis between provisional diagnosis and final diagnosis in government and private teaching hospitals: A record-linked comparative study. *J Family Med Prim Care* 2016;5:637-40.
11. McNutt R, Johnson T, Kane J, Ackerman M, Odwazny R, Bardhan J. Cost and quality implications of discrepancies between admitting and discharge diagnoses. *Qual Manag Health Care* 2012;21:220-7.

12. Hockberger RS, Force CC. The model of the clinical practice of emergency medicine. *Academic Emergency Medicine*. 2001;8(6):660– 81.
13. Hussain F, Cooper A, Carson-Stevens A, et al. Diagnostic error in the emergency department: learning from national patient safety incident report analysis. *BMC emergency medicine*. 2019 Dec 4;19(1):77. doi: 10.1186/s12873-019-0289-3. PMID: 31801474.
14. National Quality Forum. Improving Diagnostic Quality and Safety Final Report. 2017. https://www.qualityforum.org/publications/2017/09/improving_diagnostic_quality_and_safety_final_report.aspx. Accessed on February 20 2022.
15. Goh SH, Masayu MM, Teo PS, Tham AH, Low BY. Unplanned returns to the accident and emergency department—why do they come back? *Ann Acad Med, Singapore*. 1996;25(4):541–6.
16. Hussain F, Cooper A, Carson-Stevens A, et al. Diagnostic error in the emergency department: learning from national patient safety incident report analysis. *BMC emergency medicine*. 2019 Dec 4;19(1):77. doi: 10.1186/s12873-019-0289-3. PMID: 31801474.
17. Chiu HS, Chan KF, Chung CH, Ma K, Au KW. A comparison of emergency department admission diagnoses and discharge diagnoses: retrospective study. *Hong Kong J Emerg Med*. 2003;10(2):70–5.
18. Pope JH, Aufderheide TP, Ruthazer R, Woolard RH, Feldman JA, Beshansky JR, et al. Missed diagnoses of acute cardiac ischemia in the emergency department. *N Engl J Med*. 2000;342(16):1163–70.
19. Kothari RU, Brott T, Broderick JP, Hamilton CA. physicians: accuracy in the diagnosis of stroke. 1995;26(12):2238–41. *Emergency Stroke*.
20. Priyanka Patel, Kuldeep Kumar Ashta, Yamini Subramani, Sumit Kumar Ghosh. A comparative study between emergency department provisional diagnoses and final discharge diagnoses in tertiary and quaternary health centers of India. *Panacea Journal of Medical Sciences* 2022;12(1):17–22.