

**Research Article**

## **An Analytical Study in Medical Wards: The Usage and Practices of PPI for Concerned Patients**

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### **ABSTRACT**

**Objective:** Research was aimed at the determination of proton pump inhibitors (PPI) pattern used in the medical wards.

**Study Design:** Prospective observational study.

**Place and Duration of Study:** In the department of medical post graduate medical institute, the research was completed in the period of 24 weeks starting from 1<sup>st</sup> November, 2015.

**Material and Methods:** Emergency and medical wards admitted 1800 patients continuously, the cases were followed in the course of their treatment. Treatment slips were used as reference for the protocol analysis I the management of the patient's disease by the consultants.

**Results:**SPSS V-20 was used for the analysis of the results. In the total of 1800 patient's males and females were respectively 53.3 and 46.7 percent with respective strength of 960 and 840. PPIs was prescribed to 72.6 percent of the patients. Stress ulcer prophylaxis, upper G.I bleeding, acid peptic, GERD patients and use of NSAID was observed as major indication respectively 32.5, 20.0, 12.5, 8.1 and 7.5 percent respectively. No mention of PPI was observed in 19.3 percent of the cases. Oral PPI and injectable was prescribed to 42.3 and 57.7 percent of the patients. On the discharge documents PPI was not prescribed to 66.3 percent of the cases but 77.9 percent of the patients were prescribed. No mention of treatment and condition of discharge was also observed in patients.

**Conclusion:**Without any visible and clear identification and indication PPIs were overly used in the patients in discharged and hospitalized cases.

**Keywords:** Medical ward, Inpatients, PPI, patients, practices.

### **INTRODUCTION**

In OPDs, medical wards, ICUs and in medication the commonly prescribed treatment is proton pump inhibitors (PPIs). In upper gastrointestinal disorders, peptic ulcer disease, dyspepsia, nonsteroidal anti-inflammatory drug (NSAID) induced ulcer, gastro-esophageal reflux disease, hypersecretory disorders and eradication of *Helicobacter pylori* most common prescribed treatment is administration of PPI (Franciosi et al., 2018). Over prescription of the acid suppressive

medication in the hospitals is observed and accepted by maximum number of experts even in the absence of any need. The same has been indicated by the numerous researches of the past twenty to thirty years (De Bruyne & Ito, 2018). In routine many of the routine admissions are treated with PPI without any vivid use time and indication. In the presence of such signs and indications non-specific abdominal symptoms deprived of acid related indications,

corticosteroids in asymptomatic patients or NSAID without risk of upper gastro intestinal bleed(Farrell et al., 2018), co prescription with aspirin and mostly receiving long-term repeat treatments for resolved issues of the past are included. Another in-appropriate use of PPI in intravenous was also observed in the admitted cases of the hospital. Even in the literature availability the practice of PPI administration is still in use at the third-tier of healthcare even in U.K and U.S.A. Over prescription is common even in the availability of relevant literature. According to western researches this practice percentage ranges from 61 – 81 percent(Bryan, 2018).Most common indications for PPI administration include eradication of H. pylori infection, acid peptic disease, Barrett's esophagus and GERD. Higher risks of aspirin, NSAID administration by gastro-protection cases are administrated through PPI(Rodin & Flaherty, 2018). Zollinger Ellison syndrome, Stress ulcers prophylaxis in the severely sick patients pet treatment becomes necessary. In the same way PPI is administrated to the patients of recurrent functional dyspepsia and symptomatic cases(Cornu et al., 2018).PPIs duration of administration varies from four to eight weeks in the indications of severe reflux disease, gastroprotection,Zollinger Ellison syndrome and Barrett's Esophagus. But the actual figures quote and state that it is even log duration administration of PPIs is carried out(Wang et al., 2018). In the large age groups this administration for long duration is a real concern. Review of the discharge slips was also carried out. Without intervening the protocols of the management data was analyzed and gathers after getting the consent of the participants. Data was collected on a prescribed form(Nazarko, 2018).

#### **Sample Size**

The sample of the research included 1800 cases admitted in the medical wards. Thirty percent prevalence rate was calculated with the help of WHO sample determination.With three percent error margin confidence interval was calculated as 99 percent.

#### **Data Analysis Procedure**

PPIs on discharge slips, gender, route, Indication, duration and PPI use were used as categorical variables. These variables were presented in the form of multiple medication frequencies groups were mentioned for the factor of age. For the statistical percentage the data was entered for the calculation of long term PPIs use risk factor calculation. Long-term PPIs administration were associated with Clostridium difficile infection, pneumonia, bloating, iron deficiency anemia,gastric polyps, headache and hypergastrinemia. Doctor's insight was considered in this research paper. These insights about the administration of PPIs was taken from the doctors of community hospitals, general hospitals and teaching hospitals. It helped in the review of the methodology of PPIs practice in the medical wards.

#### **PATIENTS AND METHODS**

##### **Inclusion Criteria**

Age more than eighteen years patients of male and female gender were admitted in the ICUs, medical wards, emergency and clinics in the General Hospital of Lahore department during the course of research study.

##### **Exclusion Criteria**

The admitted patients were already taking acid suppression treatment or PPIs.

All the cases were enrolled in the respective treatment centers during the research paper duration.

##### **Data Collection Procedure**

Without any leave routine visits of hospital were carried out. The aim of the visit was to note the prescription of PPIs to the enrolled patients. SPSS V-20 was used for the analysis of the results. The outcomes are reflected in the tables.

#### **RESULTS**

In the total of 1800 patient's males and females were respectively 53.3 and 46.7 percent with respective strength of 960 and 840. PPIs was prescribed to 72.6 percent of the patients. Stress ulcer prophylaxis, upper G.I bleeding, acid peptic,

GERD patients and use of NSAID was observed as major indication respectively 32.5, 20.0, 12.5, 8.1 and 7.5 percent respectively. No mention of PPI was observed in 19.3 percent of the cases. Oral PPI and injectable was prescribed to 42.3 and

57.7 percent of the patients. On the discharge documents PPI was not prescribed to 66.3 percent of the cases but 77.9 percent of the patients were prescribed. No mention of treatment and condition of discharge was also observed in patients.

## DISCUSSION

Most commonly prescribed treatment in the admitted patients in any hospital setting is the administration of PPIs at the third-tier of healthcare.

**Table:** Characteristics of the patients.

	N	Percentage (%)
<b>Gender</b>		
Male	960	53.3%
Female	840	46.7%
<b>Age Group</b>		
<25	158	8.8%
25-35	402	22.3%
36-45	538	29.9%
46-55	334	18.6%
56-65	172	9.6%
>65	196	10.9%
<b>Use of PPI</b>		
Yes	1306	72.6%
		Male n=640
		Female n=666
No	494	27.4%
		Male n=240
		Female n=254
<b>Indication of PPI used in Hospital</b>		
GERD	106	8.1%
NSAID /Aspirin use	98	7.5%
Stress Ulcer Prophylaxis	424	32.5%
APD	164	12.5%
Upper G.I Bleeding	262	20.0%
Not mentioned*	252	19.3%
<b>Route</b>		
I/V	753	57.7%
Oral	553	42.3%
<b>PPI on discharge slip</b>		
Yes	1018	77.9%
No	288	22.0%
<b>Duration Mentioned on discharge</b>		
Yes	440	33.7%
No*	866	66.3%
<b>Indication Mentioned on discharge</b>		
Yes	362	27.7%
No*	944	72.3%

\***Injudicious Use:**This includes patients who were prescribed PPIs without indication during hospital stay and on their discharge cards

A total of 1800 cases were studied for the administration of PPIs as prescribed by the doctors in OPDs, ICUs, emergency and medical wards in the course of admission period and at the discharge time(Tang et al., 2018). The duration and indication were not narrated in the administration of PPIs in the admitted patients. The patients were administered PPIs for the

unspecified and longer time spans(Kumar, Yegneswaran, & Pitchumoni, 2018). In Pakistan few evidence for the administration of PPIs was available; contrarily, longer administration of PPIs was observed in the findings of international research studies. Without any clear or logical reason PPIs were administered and prescribed in most of the cases(Shimanskaya et al., 2018). It

poses a burden on the poor and less privileged patients who can not afford their treatment in private sector. Numerous side-effects are also attributed to the administration of PPIs as it is a persistent burden on the weak healthcare system (Ramsey et al., 2018). Doctors need proper awareness of these side-effects and economic loss by the patients. The proper use and administration of PIs in the prescription needs concern of the physicians (Splinter et al., 2018). International and national reports in our research paper reflects the administration PPIs in the patients as 72.6 and 53 percent respectively (Splinter et al., 2018). It speaks for the maximum utilization and prescription PPIs in the patients in the international healthcare system as reported by a research conducted in Singapore. In the same way 82.6 percent rate is stated by a Spanish research on the same subject (Papic, Maric, & Vince, 2018). Hospital therapy chart and documentation was maintained in 19.3 percent of the hospitals. According to Reid PPIs prescription and diagnosis was missing in 61 percent of the hospitals (Kumar, 2018). The fact may have been that most of the planned signs for PPIs were used, the identifications were clinical in nature, no objective patients and indication was given PPIs for some unjust proposed diagnosis (Bonaudo et al., 2018), like in the cases of upper gastro intestinal bleed of any etiology was given the prescription of PPIs, in the same way low-risk cases using NSAIDs or aspirin, with insignificant chances of stress ulceration prophylaxis (Del Prado & Bittner, 2018), gastro intestinal bleeding in every case of stroke irrespective of degree of coma or in the case of other participants who were not reported for stress ulcer prophylaxis, that is why the real magnitude of issue of PPIs prescription without any visible indication might be increased, if signs for PPIs prescription on treatment slips were analyzed critically (Aqeel & Jacobs, 2018).

In comparison to the studies conducted in U.K, our research results reflect 57.7 percent prescription of PPIs; whereas, the same rate was observed in U.K research results as 75.4 percent (Srivastava, Guin, Kukreti, & Vohora,

2018). Saudi Arabia reflected the trend of PPIs as 71.7 percent. Medical practice shows the high parental mode usage of drug intake; it seems general practice of third-tier healthcare system. In the availability of oral medication doctors prescribed injectable medications without any prominent indications (Tatsuishi et al., 2018). The cases of gastric hyper secretory syndromes, cases with nil oral and valid indication and bleeding peptic ulcers for PPIs may benefit themselves in the PPIs parental delivery mode; whereas, in the remaining groups oral administration is recommended (Robinson & Jones, 2018).

Indications for the administration of PPIs as found in the current research paper were 32.5 percent in the case of stress ulcer prophylaxis which differs from French current research that shows 17 percent PPIs prescription for the same cases (Psoinos, Collins, Ayturk, Anderson, & Santry, 2018). It was due to the fact of PPIs administrated cases that no appropriate identification and indication was present in the patients about prophylaxis, recovered critical cases not requiring prophylaxis were prescribed with the routine of PPIs administration. According to Hussain research 25 percent of the cases were administrated stress ulcer prophylaxis (GALANTE, 2018). In our study 7.5% of the patients were being prescribed PPIs with NSAIDs/ Aspirin which is quite low as compared to French study which showed 23% patients using NSAIDs along with PPIs without any risk of bleeding (Lawrence, 2018). About 12.5% patients were taking PPIs in our study for acid peptic disease and dyspeptic symptoms which is quite lower as compared to French survey i.e. 33.0%, the reason could be that most of the patients with dyspeptic symptoms generally are being treated in outpatient departments (Lauschke, Milani, & Ingelman-Sundberg, 2018). In our study no indication for PPI use was found among 19.3% admitted patients which is quite similar to the study done by Reid et al. who reported that 19.0% patients had no any indication for PPI use. Indications for the administration of PPIs as found in the current research paper were 32.5 percent in the case of stress ulcer prophylaxis which differs from French current research that shows 17

percent PPIs prescription for the same cases(Koop, 2018), whereas a total of 77.9 percent of the cases were prescribed of PPIs on the slips of discharge in our research. A total of 66.3 percent was given medication without any vivid identification and no duration was communicated to the patients for the use of medicine. No mention of indication was found in 72.3 percent of the slips(Tapper et al., 2018). According to Ramirez 54.75 percent of the cases after discharge prescribed for PPIs that is different as per our research results that reflects the same value as 77.9 percent. Higher number was noticed in the current research paper(Oboh, 2018).To avoid this mal-practice clear and countersigned discharge slip of the doctors is mandatory, which was observed in 72.3 percent of the cases. Extra cost and side effects were attributed to poor rate of follow-ups and lack of supervision in Pakistani community(Hassan, 2018).

Few limitations like appropriate prescription, validation of the signs and physician paperwork are attributed to this research paper. Overestimation occurrence is higher when just records are consulted for the appropriateness of the prescription of PPIs in the enrolled patients(Mora & Valencia, 2018).

## CONCLUSION

It is strongly concluded that PPIs prescription is unjustified and it is over prescribed therapy with any visible indication of signs and symptoms. This poor diagnosis leads to the unjustified administration of PPIs in the admitted patients. Potential side effects and extra financial burdens are also attributed to the application of PPIs specially in the case of higher age groups being administered with PPIs. Implementation of route of application and guidelines in the need of the hour. Follow-up must start from the discharge time. Follow-up visits are also recommended.

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