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Prevalence and Rehabilitation Habit of Acid Exploitability on Inpatients of Internal Medicine Ward.

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Abstract:

Acid suppressive medicine has been boosted up in day in and day out in last few years. The present data have been designated that recurrent use of acid suppressants for non-accepted hintsis common.

The objective of the study was to find out the signs and prevalence of acid suppressants used by patients during the time of admission and at clearance from the hospital.

This study was accompanied with of 220patients who were admitted to National Medical College. Teaching Hospital. Relevant medical history of the patient, the use of acid suppressive medicine, and indications of symptoms were collected from both medical records and discharge medicationlists of the patient.

220 patients were considered, and it was found that 26.9 % of the patient were taking acid suppressive drugs before admission, of which 38% of the patient use proton pump inhibitors (PPIs). As soon as the patients wereself-confessed, acid suppressant use has been amplifiedby 73.1% (161 of 220), among 82.6%, 12.42%, and6.9%PPIs, H_2antagonists and combination therapy correspondingly. On the basis of principles, It was noted that only11.18%(18of161) of those patient using acid suppressive drugs were found to have an tolerable indication. The history of a patient of gastroesophageal reflux disorder (GERD) was supposed to have an indication (32 other patients), 31.05% (50 of 161) had another acceptable indication. The history of gastrointestinal bleeds more than 3 months on since preliminary diagnosis was encompassed 7% of the population. The group of GERD patients were 27% of this group. Compared to the 26.9% of patients who were taking acid suppressive drugs prior to admission, 57% (125 of 220) of patients were prescribed to take acid suppressive drugs at time of discharge. Inrecent exacerbations of GERD were found having long-term indications, It was also noted that only 15% (12 of 125) of these patients were found to have accepted indications. If all GERDs were acceptable long-term indications, 27.26% (34of 125) would have met criteria for acceptable outpatient use.

CONCLUSIONS: The long-term usage of acid suppressive drug in both the inpatient and outpatient settings.

KEY WORDS: proton pump inhibitors, ulcer. H**2**-receptor antagonists, GERD.

Introduction:

Acid suppressive drugs are used for the healing of acid linked disorders. In this disorder the drugs that abundantly used such as Proton pump inhibitors (PPIs) and histamine2-receptor antagonists (H2RAs) in both inpatient and outpatient settings during various conditions. PPIs and the H2RAs are measured to be primary agent common indications such as peptic ulcer disease (PUD) and gastroesophageal reflux disorder (GERD). The first PPI, omeprazole, was first found on the market of US 1980s. Since then, PPIs have been demonstrated as superior effectiveness in acid suppression over their antecedent agents, the H2RAs. The PPIs have been found to increase a lack of confrontational effects or drug inter actions. PPIs reduces gastric acid secretion via the selective inhibition of H/K-ATPase pump. HCL is secreted from gastric parietal cells [1]. During comparison with the PPIs, H2RAs possess some pharmacologic shortcomings. H2RAs ineffectively decreases gastric acid from the parietal cell and only block the histamine2-related stimulation of acid secretion, as a result in tachy- phylaxis appearing as early as 48–72 hours into therapy [2].The burgeoning use of PPIs and a small but having significant link to certain types of infections such as Clostridium difficile colitis [3,4]and pneumonia [5]have brought forth new reasons to scrutinize the ways in which acid suppressants are prescribed [6].Different studies also have linked the H2RAs increment rates of infections. Pneumonia is potentiated by H2RA usages.H2RAs are no longer implicated in the development of pneumonia. The augmented usage of PPIs for this pneumonia may provide new causes for concern.

It is important to make out that with the augmentation in the role of acid suppressants, fostered in part by increasing the availability of PPI and expanding over-the status of appropriate use of acid suppressant drugs that need more scrutiny.

The aims of the study were to find out the proper indications and prevalence for using of acid inhibitor in non-critical patient of National Medical college and teaching hospital during admission and and in the time of discharge.

Methodology

Participants

This retrospective study involved 220 participants were randomly selected medical charts from a 6month (April-October,2018) list of patients who were admitted in internal medicine department of National Medical College Teaching Hospital Birgunj, Nepal. Ethical approval and prior permission were obtained from the Institutional Research Committee before commencement of the study and the experiments was performed in accordance with the ethical standards of the committee and with the Helsinki declaration.

Record review order was considered random and was based on those that could be obtained first by medical records and then reviewed by the authors over a 6-month period. Reviews continued until and unless the desired number had been achieved. The hard copy and electronic records of all section were carried out to find the needed data. Patients were included in one by one to the study and recounted were not done during data collection.

During the time of the review process, the hospital formulary covered pantoprazole and ranitidine as the selected PPI and H2RA, correspondingly. Patient data upon admission encompassed necessary demographics, past medical history, and medication usage. The commencement or addition of acid suppressor was noted along with their symptoms, and all changes were monitored until hospital discharge. List of the medication during discharge were cast-off to identify successive outpatient counseling. Acid suppressant was listed in outpatient discharge, it was implicit that the patient took that drug after discharge for at least that one prescription fill, but no other records were retrieved to verify or negate outpatient use of these drugs. Documented indications were those now itemized by the Food and Drug Administration (FDA). The succeeding were considered accredited indications for acid suppressant therapy: gastric and duodenal ulcer without mode exacerbations within the preceding 3 months, GERD with predictable exacerbations within the past 3 months, pathological hyper secretory conditions, indications recently related with indigestion within the last 6months,and PPI use for helicobactor pylori eradication; pro- phylaxisfor gastropathies concomitant with nonsteroidal anti-inflammatory drugs (NSAIDs) were also deemed appropriate.

Non-accepted symptoms encompassed intending of acid suppressant medications for low-risk stress ulcer prophylaxis for non–unfavorably ill medical patients; prophylaxis of PUD accompanying with corticosteroids or anticoagulants; a history of GERD, gastrointestinal (GI) bleed, or PUD for more than 3 months deprived of persistent difficulties or exacerbations; anemia; and no illusive indication ostensive from the patient chart.

Statistical Analysis:

Descriptive statistics of different variables of the participants were presented as means ± standard deviation and those were calculated for all the variables. To test the significant difference of the variables, the t - test was performed. Statistical analyses were performed using the statistical software IBM SPSS version 20.

Results:

Table 1 represent the frequency and distribution of demographic distribution of the parameter of the patient. The demographic status such as age, race, different clinical conditions, use of drugs at prior to admission in hospital has been taken into account. As our data has been collected in national Medical college hospital which is one of the pioneer medical college of Nepal, different races along with different ethnic groups are noted in our data.
Table 1 showed that among the different races, Nepali Mahdesi is preponderance (75%) and 2nd majority races Nepali pahadi that constitute about (16%) of total patients.

Table 1. Frequency and percentage of demographic baseline of Patient

Character	No of sample (N=220)	%
Age	50.45±8.45	
Female	113	51.36
Race:		
Nepali Madhesi	165	75
NepaliPahadi	35	16
Indian	10	4.5
Others	10	4.5
Conditions:		
Diabetic Meletus	67	30.4
Chronic Renal Disease	60	27.2
Congestive heart failure	15	7
COPD	25	11
Liver Disease	10	4.5
HIV	5	2.2
Drug prior admission		
Antiplatelet dual therapy	35	16
Antiplatelet mono therapy	19	9
PPIs	46	21
Corticosteroid	32	14.5
NSAIDS	24	11
Warfarin	14	6.3
H_2Ras	19	9

As shown in Table 2, 73.1% (n = 161) of patients comprised in the investigation were taking acid suppressant drugs while in the hospital, by and large patients use PPIs. If proposed patients with a listed history of GERD but no exacerbations predictable within the last 3 months were considered disadvantageous, acceptable indications for acid suppressant therapy accounted for12% of the group

Table 2. Indications for Use of Acid Suppressive Medications

Population	N	%
Total No of sample	220	
Acid suppressant therapy in inpatient	161	73.1
Acceptable indication with no history of GERD	18	11.18
Acceptable indication with history of GERD	50	31.05
No acceptable indication with recent history of GERD acceptable	140	87
No acceptable indication with all history of GERD Acceptable	108	67
Prescribe therapy:		
PPIs	133	82.6
H_2Ras	20	12.42
Combination Therapy	11	6.9
Acid suppressant therapy during discharge of the patient	125	57
Acceptable indication with no history of GERD	15	12
Acceptable indication with history of GERD	34	27.2
No acceptable indication with recent history of GERD acceptable	107	85.6
No acceptable indication with all history of GERD Acceptable	88	70.4
Prescribe therapy:		
PPIs	94	75.2
H_2Ras	19	15.2
Combination Therapy	9	7.2

Table 2. also presents the findings for the sample of inpatients upon their discharge. Inpatients who prolonged taking acid suppressants at discharge encompassed 54% of the total population. However, if all patients with flush inaccessible history of GERD were encompassed as having an acceptable indication,

Table 3 Acid Suppressive Therapy with No Accepted Indications

Diagnosis	N	%
No acceptable indication	140	
No aparant indication	44	31.42
Historyof GERD before admission	36	26
Use of corticosteroid	33	23.5
Stress Ulcer	26	18.5
History of Peptic ulcer before admission	8	6
Bleeding in GI tract	7	5
Anaemia	3	2.14

Discussion:

Our present research revealed by and large proportion of patient were consuming acid inhibitors while the patient is underneath the medical supervision in hospital and few of them are unacceptable warning sign. Our research outcome designated 29%of the patient were using acid inhibitors atprior to admission to the hospital. Medicament of acid inhibitor amplified to 73.1% at the time of admission. In earlier studies it was found in Irish general hospital where the appropriateness of PPI in 157 patients in the hospital during the treatment[7].Here in our present

study about 73.1% of the patient were recommended to take PPI and 1/3 of them were gone for endoscopy. In our studies it has been renowned that use of combination drug such as PPI and H_2Ras enormously upsurges day by day during the management where justification seems limited to the patient with rebellious GERD[8-14]. Based on our finding and other studies recommended that prescribing of acid suppressant or acid inhibitors comparatively becomes omnipresent and inappropriate [7,15-20]. Another reflective study conducted in teaching hospital in Australia was establish that only 37% of inpatient were given acid suppressant which is up to standard by Australian schedule of pharmacological benefit[18].this Study was analogous to our study.

It was found from the study shepherded in United Stated of America that 54% of general medicine inpatients were prescribed the acid suppressant but they do not have accepted indication for therapy[15,16].This similar trends of using PPI was found in other study conducted by Bashford et.al[21].The use of acid suppressant on the patient with non-accepted indication that appears to be low risk patient with unindustrialized stress ulcer, was recognized by Nardino et.al[16].Our report indicated that in apposite prescribing that interconnected with either corticosteroid use(23.5%) or ulcer prophylaxis (18.5%).Our data are not adequate to support genera; PUD prophylaxis for medical inpatient outside of the critical care environment.

On the contrary PPI protection from PUD for those long term use of NSAID[22].There is no overtone to increase the risk for PUD on corticosteroid use was postulated in meta-analysis study[17].A study of Italian teaching hospital demonstrated that 40% in appropriate prescribing of PPI involved ulcer prophylaxis in patient.[18].Many other studies also supported our outcomes of in proper use of acid suppressant. PPIs were prescribed for untested indication of patient demonstrated by Walker et al.[19].The silent surveillance of our study is the continuous misuse of acid suppressant upon the hospital discharge. Indication of study is 27% of the patient used the acid suppressant prior to the admission in hospital and 57% of the patient at the time of discharge. However, the discharge of the patient on no acceptable indication with acid suppressant but history of GERD is an acceptable indication. This finding again become analogous to Mardino et.al[16].

What so ever patients are discharged with prescribing acid suppressant most of them having no appropriate indication. The outpatient prescription appeared to mimic the inpatient trends with our unwavering range of appropriateness near about 10% to 27%. The inpatient misuse that enables linger misuse of outpatient environment.

The recent data associating PPIs with augmented risk of C.difficile colitis and community acquired pneumonia[3-6].The recommendation of PPIs in both inpatient and outpatient prerequisite more critically probed using time-honored advantage versus risk adage.
Hospital formulary outline patient care recommendation should be verbalized to help implement more judicious and sparing use of acid suppressant rehabilitation for both inpatient and outpatient.

Conclusions

Present data distinguish not only the conjoint use of acid suppressant drugs in medical practice, but also how these medications are recommended elsewhere their current FDA indications in the majority of cases. There is an ever-developing prerequisite for due attentiveness in the increased non-indicated prescribing of acid suppressants. These agents should be originated or continued based only on anevidence-based and patient-specific need for the therapy.

Conflict of Interest

Author declare there is no conflict of interest.

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List of Abbreviations

COPD- Chronic Obstructive Pulmonary Disease.
H_2RAS- Histamine$_2$ receptor Antagonist.
NSAIDS- Nonsteroidal anti-inflammatory drugs.
PPIs - Proton Pump Inhibitors
GERD- Gastroesophageal reflux disease .
GI - Gastrointestinal

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