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Review Article

Orthopedic Practice: Optimizing Gastrointestinal Care with Proton-Pump Inhibitors like Rabeprazole

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Abstract

Gastrointestinal (GI) complications frequently encountered in orthopedic practice, especially with bisphosphonate use, present a significant concern. Bisphosphonates, integral to manage bone-related disorders like osteoporosis, are linked to poor absorption and esophageal irritation, contributing to heartburn and discomfort. Proton-pump inhibitors, such as rabeprazole, are important for preventing GI issues due to their acid-suppressing properties and unique mucus-protective action. This dual action shields the upper digestive tract, making rabeprazole a promising choice for orthopedic patients susceptible to GI complications. The mechanism of action involves irreversible inhibition of the hydrogen-potassium ATPase enzyme, ensuring sustained acid reduction. Clinical evidence supports the efficacy of Rabeprazole, with studies demonstrating its effectiveness in preventing GI complications and promoting esophageal healing. This comprehensive overview highlights the role of rabeprazole as a valuable therapeutic option in orthopedic practice, providing insights for optimal patient care.

Keywords: Gastrointestinal, Orthopedic patients, Proton-pump inhibitors, Rabeprazole

INTRODUCTION

Gastrointestinal (GI) side effects are a common concern in orthopedic practice, often linked to the use of bisphosphonates and other drugs. Bisphosphonates are a class of medications that are used to treat and prevent osteoporosis and other bone-related disorders. One of the key contributors to these GI issues is the use of bisphosphonates in orthopedic practice. They are a class of drugs used to manage bone-related disorders like osteoporosis and are often prescribed in orthopedics to enhance bone health and prevent fractures.[1] However, these medications, particularly oral bisphosphonates, are associated with poor absorption by the body and may lead to irritation of the esophagus, resulting in heartburn and other discomforts.[2]

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ROLE OF PROTON-PUMP INHIBITORS (PPIs) IN GI COMPLICATION PREVENTION

PPIs are a class of medications commonly used to reduce stomach acid production. They are widely prescribed for the treatment of various acid-related disorders from peptic ulcer to more severe issues such as gastroesophageal reflux disease.[3] Given their relevance in reducing gastric acid production and protecting the GI mucosa, PPIs like rabeprazole have emerged as vital component in the management of GI side effects.[4,5] Rabeprazole not only reduces stomach acid but also protects the mucus lining of the stomach and upper small intestine from damage caused by stomach acid.[5] This dual action of rabeprazole, reducing stomach acid and protecting the mucus lining, positions it as a potential consideration for patients facing acid-related challenges and at risk of GI complications.

MECHANISM OF ACTION OF RABEPRAZOLE

The mechanism of action centers around the ability of the molecule to irreversibly inhibits the hydrogen-potassium ATPase enzyme in the parietal cells of the

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stomach [Figure 1]. By binding to this enzyme, rabeprazole effectively reduces the production of gastric acid. Unlike H2-receptor antagonists, which temporarily block histamine-induced acid production, PPIs like rabeprazole offer long-lasting acid suppression, making them more effective in managing conditions requiring sustained acid reduction.[4]

CLINICAL EVIDENCE OF RABEPRAZOLE

Several clinical trials have investigated the efficacy of rabeprazole in preventing GI complications. For instance, in a comparative study by Williams *et al.,* placebo was compared with Rabeprazole at doses of 10, 20, and 40 mg. The study revealed that rabeprazole 40 mg significantly decreased acidity compared to both 10 and 20 mg, leading to longer durations of intragastric pH maintenance above 3.[6] In another study published in therapeutics and clinical risk management, the effectiveness of rabeprazole 40 mg in healing duodenal ulcers was reported, demonstrating an impressive cure rate of 90%.[7] Furthermore, Hayato *et al.*, in the European Journal of Clinical Pharmacology, published a study reporting that rabeprazole exhibits improved antisecretory activity with an increase in dosage.[8]

This cumulative evidence underscores the varying strengths and applications of rabeprazole, showcasing its efficacy in reducing acidity, promoting duodenal ulcer healing, and highlighting the dose-dependent nature of its antisecretory activity. It also lays a solid foundation for rabeprazole to be a potential therapeutic option for bisphosphonate-related GI complications.

CONCLUSION

In addressing concerns about bisphosphonate-related GI side effects in orthopedic practice, rabeprazole, a PPI, emerges as a pivotal solution. The mechanism of this molecule involves irreversibly inhibiting the hydrogen-potassium ATPase enzyme, ensuring sustained acid suppression. Clinical evidence, including comparative studies, underscores the efficacy of rabeprazole in reducing acidity and promoting duodenal ulcer healing. This positions rabeprazole as a promising therapeutic option for managing GI complications associated with bisphosphonate use in orthopedic patients.

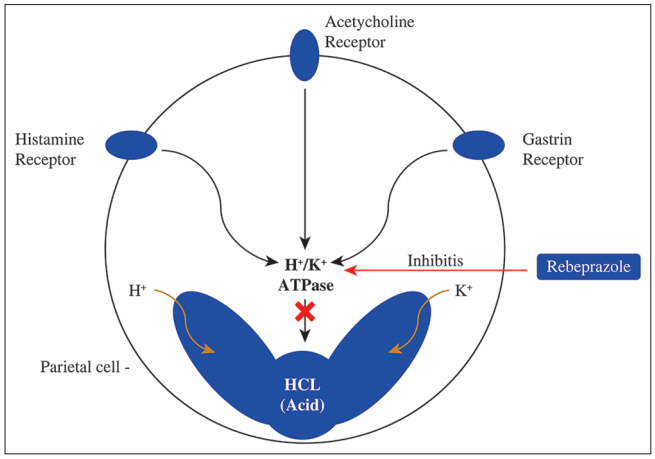

Figure 1: Mechanism of action rabeprazole

EXPERT OPINION

Dr. Mahesh Chavhan, (M.B.B.S., D. Ortho, M.S.)

I prescribe bisphosphonates to <50% of patients. I am aware of the different bisphosphonates and their varied administration methods, including the challenge of poor absorption and potential esophageal irritation. Long-term bisphosphonate use carries an increased risk of esophageal cancer. I prefer PPIs to manage GI side effects. PPIs inhibit gastric acid secretion, protect the gut mucosa, and are initiated from the beginning of treatment. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs improve symptoms and reduce ulcer complications. Comorbid conditions affect <50% of my patients. I choose PPIs based on individual needs and consider their mechanisms of action. The mucus-protective action of rabeprazole makes it a valuable choice. I have observed that non-steroidal anti-inflammatory drugs (NSAIDs) are other culprits for GI-related side effects in orthopedic practice.

Dr. Shruthi Miriyala, (MBBS, MS Ortho)

In my practice, I prescribe bisphosphonates to <50% of patients, aware of their varied administration methods and potential side effects, including esophageal cancer risk. I prefer PPIs for GI side effects, particularly for their long-lasting gastric acid suppression. I started PPI therapy on day 1 of bisphosphonate treatment. I suspect GI issues in more than 50% of cases. High-dose PPIs can improve symptoms and reduce ulcer complications. Comorbid conditions affect more than 50% of my patients. I have a good understanding of different PPIs and their metabolic pathways. Some PPIs may be more beneficial for severe GI complications due to their mechanisms. I am aware that rabeprazole is the only PPI with mucus-protective action. I believe that NSAIDs and bisphosphonates are common culprits for GI-related side effects.

Dr. Sreevishnu Pavithran, (MBBS, MS Orthopedics)

In the clinic for <50% of patients, I prescribe bisphosphonate. I am aware of the different bisphosphonates and their varied administration methods, including the challenge of poor absorption and potential esophageal irritation.

Long-term bisphosphonate use carries an increased risk of esophageal cancer. I prefer PPIs to manage GI side effects due to their long-lasting inhibition of gastric acid secretion. I initiate PPI therapy at the beginning of bisphosphonate treatment as a preventive measure. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs effectively improve symptoms and reduce ulcer complications. Comorbid conditions affect more than half of my patients, and I choose PPIs based on individual needs and consider their mechanism of action. However, I am not aware of rabeprazole being the only PPI with mucus-protective action. In addition, in my orthopedic practice, NSAIDs and bisphosphonates are among the other culprit drugs for GI-related side effects.

Dr. Sharath Babu. N, (MBBS, DNB Orthopedics)

During practice, I prescribe bisphosphonates to <50% of patients. I am aware of the various bisphosphonates and their different administration methods. I also recognize the risk of esophageal cancer with long-term bisphosphonate use. When patients develop GI side effects following bisphosphonate treatment, I prefer using PPIs known for their long-lasting inhibition of gastric acid secretion and gut mucosa protection. My ideal approach involves monitoring patients closely and adding PPIs as needed. While I suspect GI complications in some patients, the prevalence remains below 50%. High doses of PPIs can improve symptoms and reduce complications for those at higher risk for peptic ulcer disease. More than half of the patients that I see every day have comorbid conditions such as diabetes, hypertension (HTN), and cardiac disorders. Furthermore, I am well-versed in different PPIs and their metabolic pathways. Some PPIs offer more benefits in severe GI complications due to their mechanisms. Rabeprazole, the only PPI with mucus-protective action, is valuable in preventing GI complications. In my opinion, NSAIDs and bisphosphonates can also lead to GI-related side effects.

Dr. Guriqbal Singh Chhina, (MBBS, D. Ortho, M. C. H. Ortho)

I recommend bisphosphonates to <50% of my patients. I am well aware of the different bisphosphonates and their varied administration methods, including the challenges of poor absorption and potential esophageal irritation. Long-term bisphosphonate use carries an increased risk of esophageal cancer. I prefer PPIs to manage GI side effects. PPIs inhibit gastric acid secretion, protect the gut mucosa, and are initiated from the beginning of treatment. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs improve symptoms and reduce ulcer complications. Comorbid conditions affect <50% of my patients. Although I lack knowledge about the different PPIs and their metabolic pathways, I recognize the potential benefits of some PPIs for severe GI complications due to their mechanisms of action. I am aware that rabeprazole is the only PPI with mucus-protective action, making it a valuable choice. I have observed that NSAIDs and bisphosphonates are among the other culprits for GI-related side effects in orthopedic practice.

Dr. Harsha Vardhan, (MBBS, MS Ortho)

I do not prefer bisphosphonates, and I prescribe them for <50% of patients. I am aware of the different types of bisphosphonates and their varying administration methods. Oral bisphosphonates can be poorly absorbed, causing gullet irritation. While long-term use has been associated with certain risks, esophageal cancer is not commonly observed. When GI side effects occur after bisphosphonate treatment, I prefer PPIs. PPIs offer long-lasting gastric acid inhibition and protect the gut mucosa. My ideal approach is to start PPI therapy on day 1 of bisphosphonate treatment. I suspect GI bleeding or serious damage in <50% of patients and high-dose PPIs can improve symptoms and reduce peptic ulcer complications. More than half of my daily outpatient department (OPD) patients have comorbid conditions such as diabetes, HTN, and cardiac disorders. I am well-informed about different PPIs and their metabolic pathways, allowing me to choose the most suitable one. Some PPIs are more effective in treating severe GI complications due to their mechanisms. Rabeprazole, with its mucus-protective action, is my choice to prevent GI complications. In my orthopedic practice, I have noticed that NSAIDs and bisphosphonates, both are responsible for GI-related side effects.

Dr. K.Sambasiva Rao, (MBBS, M.S Ortho)

In practice, I prescribe bisphosphonates to <50% of patients. I am aware of the different bisphosphonates and the challenge of poor absorption and potential esophageal irritation, though I do not commonly encounter concerns about long-term cancer risks. When GI side effects occur after bisphosphonate treatment, I prefer using PPIs, which offer long-lasting inhibition of gastric acid secretion and protect the gut mucosa. I initiate PPI therapy from day 1, suspect GI issues in <50% of patients, and know that high-dose PPIs can improve symptoms and reduce ulcer complications. Comorbid conditions affect more than 50% of my patients. I have good knowledge of different PPIs and their metabolic pathways, and I consider their mechanisms when selecting the appropriate PPI. Rabeprazole, with its mucus-protective action, is the sole PPI that I use to prevent GI complications. To my knowledge, both NSAIDs and bisphosphonates contribute GI-related side effects.

Dr. Darsh Goyal, (MBBS, M.S. Orthopedics)

I prescribe bisphosphonates to <50% of patients. I know about different bisphosphonates and their varied administration methods. Long-term bisphosphonate use

carries an increased risk of esophageal cancer. I prefer using PPIs to manage GI side effects. PPIs provide long-lasting inhibition of gastric acid secretion and protect the gut mucosa. I started PPI therapy at the outset of bisphosphonate treatment. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs can significantly improve symptoms and reduce ulcer complications in those at higher risk. Comorbid conditions, such as diabetes, HTN, and cardiac disorders, affect the majority of my patients. I have a good understanding of different PPIs and their metabolic pathways, allowing me to choose the most suitable one based on the patient's needs. Some PPIs may offer greater benefits for severe GI complications due to their mechanism of action. I am aware that rabeprazole is the only PPI with mucus-protective action. And I believe that NSAIDs and bisphosphonates are among the other culprits leading to GI-related side effects.

Dr. G Premnath, (MBBS, D Ortho, DNB)

For <50% of patients, I prescribe bisphosphonates. I am well aware of the different bisphosphonates and their administration methods. Oral bisphosphonates tend to be poorly absorbed and can cause gullet irritation and heartburn. Long-term bisphosphonate use has been linked to esophageal cancer risk. When patients experience GI side effects after bisphosphonates, I prefer PPIs for their long-lasting gastric acid inhibition and gut mucosa protection. I initiated PPI therapy on day 1 of bisphosphonate treatment. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs effectively improve symptoms and reduce ulcer complications for high-risk individuals, and the majority of my patients have comorbid conditions. I am knowledgeable about different PPIs and their metabolic pathways, and I choose PPIs accordingly. Some PPIs offer superior benefits in severe GI complications due to their mechanisms. I am aware that rabeprazole is the only PPI with mucus-protective action. To my knowledge, only NSAIDs are among the culprit drugs leading to GI-related side effects, requiring vigilant monitoring.

Dr. Samson Samuel Edayalamuriyil, (MS Orthopedics)

I prescribe bisphosphonates to <50% of patients. I am well aware of the different bisphosphonates and the challenges of oral administration with long-term bisphosphonate use related to esophageal cancer. For GI side effects, I prefer PPIs for their efficacy, long-lasting acid inhibition, and gut mucosa protection. I initiated PPI therapy on day 1 of bisphosphonate treatment. While I suspect some GI issues due to bisphosphonates, the prevalence remains below 50%. High-dose PPIs effectively manage peptic ulcer disease. Comorbid conditions affect <50% of my patients. My knowledge of different PPIs allows me to make tailored choices, and I also know about the mucus protection action of rabeprazole. In my practice, NSAIDs and bisphosphonates are common culprits for GI side effects.

Dr. Rohan Bhiwgade, (MBBS, MS Ortho)

I prescribe bisphosphonates to <50% of patients. I am aware of the different types and their administration methods. Oral bisphosphonates can lead to heartburn due to poor absorption, and long-term use is associated with esophageal cancer risk. When patients develop GI side effects, I prefer using PPIs for their ability to inhibit acid secretion and protect the gut mucosa. I started PPI therapy on day 1 of bisphosphonate treatment. While I suspect some patients may experience GI issues, the prevalence is below 50%. High-dose PPIs can improve symptoms and reduce ulcer complications. Comorbid conditions such as diabetes, HTN, and cardiac disorders affect the majority of patients I see daily. I am aware of different PPIs and their metabolic pathways which helps me choose the most suitable one based on individual needs. Some PPIs may be more effective in treating severe GI complications due to their mechanisms. Rabeprazole has mucus-protective action, which makes it valuable for preventing GI complications, and in my opinion, NSAIDs and bisphosphonates both contribute to GI-related side effects.

Dr. D Mahendranath Reddy, (MS Ortho)

I prescribe bisphosphonates to <50% of patients and am aware of the various types and administration methods. I recognize the challenges of oral bisphosphonates, such as poor absorption and esophageal irritation. I do not believe that there is an association between long-term bisphosphonate use and esophageal cancer. When patients experience GI side effects after bisphosphonate treatment, I prefer PPIs for symptom management. PPIs inhibit gastric acid, protect the gut mucosa, and are initiated from the start. I suspect GI issues in the majority of patients. High-dose PPIs effectively improve symptoms and reduce ulcer complications for those at higher risk. In my clinic, the majority of patients have comorbid conditions. I know about different PPIs and their metabolic pathways, aiding in personalized treatment selection, and I am also aware that certain PPIs are more effective in severe GI complications due to their mechanisms of action. Rabeprazole, with its mucus-protective action, is important in preventing GI complications. In addition, in my orthopedic practice, NSAIDs and bisphosphonates are known culprits for GI-related side effects.

Dr. Chethan Kumar R, (MBBS, MS)

In my orthopedic practice, I prescribe bisphosphonates to <50% of patients. I am aware of the different

bisphosphonates and their varied administration methods, including the challenge of poor absorption and potential esophageal irritation. Long-term bisphosphonate use carries an increased risk of esophageal cancer. I prefer PPIs to manage GI side effects. PPIs inhibit gastric acid secretion, protect the gut mucosa, and are initiated from the beginning of treatment. While I suspect GI issues in some patients, the prevalence remains below 50%. High-dose PPIs improve symptoms and reduce ulcer complications. The majority of my patients have comorbidities. I choose PPIs based on individual needs and consider their mechanisms of action. Rabeprazole has a unique mucus-protective action that makes it a valuable choice. I have observed that NSAIDs and bisphosphonates are other culprits for GI-related side effects in orthopedic practice.

Dr. Uday Phute, (DNB, D. Ortho, MNAMS)

In my orthopedic practice, over 70% of patients have prescribed bisphosphonates due to their relevance in managing bone conditions. I am aware of the diverse bisphosphonates and their varying administration methods, along with the associated issues such as poor absorption and the risk of esophageal irritation. I prefer PPIs for managing GI side effects after bisphosphonate treatment due to their long-lasting acid inhibition and mucosa protection. I initiate PPI therapy at the beginning of bisphosphonate treatment. While I suspect GI complications in some patients, the prevalence is <50%. I think when PPIs are given in high doses which can improve symptoms and reduce ulcer complications. Furthermore, the majority of patients I come across have comorbid conditions. I am well aware of different PPIs and their metabolic pathways, and also I am also aware that rabeprazole has mucus-protective action. I believe that both NSAIDs and bisphosphonates are among the other culprits causing GI-related side effects.

Dr. Rohit Pandey, (MS Ortho)

I prescribe bisphosphonates to fewer than half of my patients, with awareness of the varying administration methods and potential side effects, including the risk of esophageal cancer. When addressing GI side effects, I prefer PPIs for their enduring gastric acid suppression. I initiated PPI therapy on day one of bisphosphonate treatment. GI issues are suspected in less than half of the cases. High-dose PPIs can ameliorate symptoms and reduce ulcer complications. Comorbid conditions are present in more than half of my patients. I possess a solid understanding of diverse PPIs and their metabolic pathways, allowing me to make informed choices. Certain PPIs may offer enhanced efficacy in severe GI complications due to their specific mechanisms. It is worth noting that rabeprazole is the sole PPI with mucus-protective action. In addition, in my practice, I have observed that both NSAIDs and bisphosphonates cause GI-related side effects.

Dr. Jipin Gopi, (MBBS, D-Ortho DNB MRCS)

I prescribe bisphosphonates to less than half of my patients and am familiar with the various types and administration methods. I acknowledge the challenges of oral bisphosphonates, including poor absorption and potential esophageal irritation. I do not firmly link long-term bisphosphonate use to esophageal cancer risk. When patients encounter GI side effects post-bisphosphonate treatment, I opt for PPIs for symptom relief. PPIs effectively inhibit gastric acid and safeguard the gut mucosa, commencing with treatment initiation. I encounter GI issues in less than half of my patients. High-dose PPIs demonstrate significant symptom improvement and reduce ulcer complications in high-risk cases. Fewer than half of my patients present with comorbid conditions. My knowledge extends to diverse PPIs and their metabolic pathways, enabling tailored treatment choices. I recognize that certain PPIs exhibit enhanced efficacy in severe GI complications due to their unique mechanisms. Rabeprazole has a unique mucus-protective action, which plays a crucial role in preventing GI complications. Notably, in my orthopedic practice, both NSAIDs and bisphosphonates are recognized culprits for GI-related side effects.

Dr. Shreedhar S Kulkarni, (M.S. Orthopedic Surgery)

In my orthopedic practice, I prescribe bisphosphonates to <50% of patients. I am well-acquainted with the diverse bisphosphonates and their varying administration methods. I also acknowledge the risk of esophageal cancer linked to long-term bisphosphonate use. To address GI side effects that may arise after bisphosphonate treatment, I favor the use of PPIs. PPIs are recognized for their enduring gastric acid suppression and mucosal protection. My approach involves close patient monitoring and adding PPIs as necessary. While I suspect GI complications in some patients, it is observed in less than half of cases. High-dose PPIs can effectively alleviate symptoms and reduce complications, particularly for individuals at elevated risk of peptic ulcer disease. In my daily practice, more than 50% of patients have comorbid conditions. I am certain about some PPIs and how they offer added benefits for severe GI complications due to their unique mechanisms. Rabeprazole, distinguished by its mucus-protective action, plays a pivotal role in preventing GI complications. In addition, I have noticed that both NSAIDs and bisphosphonates can contribute to GI-related side effects.

Dr. Dhilip Kumar, (MS Ortho)

In my practice, I prescribe bisphosphonates to <50% of patients due to their crucial role in bone health. I am aware of the variety of bisphosphonates and their distinct administration methods. While oral bisphosphonates pose absorption challenges and potential gullet irritation, long-term use has raised concerns about esophageal cancer risk.

To manage GI side effects after bisphosphonate treatment, I prefer PPIs. They provide long-lasting inhibition of gastric acid secretion and protect the gut mucosa. Initiating PPI therapy from day one is an ideal approach. GI issues are suspected in some patients, but GI bleeding or severe damage is <50%. High-dose PPIs improve symptoms, especially in high-risk peptic ulcer disease cases. Over 50% of patients in my practice have comorbid conditions. I am knowledgeable about various PPIs and their metabolic pathways. Some PPIs offer superior benefits in severe GI complications, with rabeprazole having the most mucus-protective action. In my view, NSAIDs are the other reason for GI-related side effects, warranting careful consideration.

Dr. Y Panduranga Rao, (MS Ortho)

In my orthopedic practice, I prescribe bisphosphonates to <50% of patients. I know about different bisphosphonates and their varying administration methods, along with the common issue of poor oral bisphosphonate absorption, which can lead to gullet irritation and heartburn. However, I was not aware of a direct link between long-term bisphosphonate use and the risk of esophageal cancer. When patients experience GI side effects after bisphosphonate treatment, I prefer the use of PPIs due to their long-lasting inhibition of gastric acid secretion and gut mucosa protection. My ideal treatment approach involves closely monitoring for side effects and adding PPIs if necessary. While I do suspect GI issues in some patients, it remains below 50%. I am aware that different PPIs have distinct metabolic pathways and mechanisms of action that may be more beneficial for severe GI complications. In additio, I know that rabeprazole is the only PPI with mucus-protective action. As per my knowledge, both NSAIDs and bisphosphonates are responsible for GI-related side effects.

Dr. Pradyumna R, (MBBS, MS Ortho, FASM)

In my orthopedic practice, I prescribe bisphosphonates to <50% of patients, and I am aware of their varied administration methods. I acknowledge that oral bisphosphonates tend to be poorly absorbed and may cause esophageal irritation. However, I am not convinced of the long-term cancer risk. When GI side effects occur after bisphosphonate treatment, I prefer PPIs for their efficacy. PPIs inhibit gastric acid secretion and protect the gut mucosa. I started PPI therapy on day 1, which, in my experience, is the ideal approach. Over 50% of my patients may experience GI issues related to bisphosphonates, and I am aware that high-dose PPIs can improve symptoms and reduce complications in peptic ulcer disease. More than 50% of my daily OPD patients have comorbid conditions, emphasizing the need for comprehensive GI care. While I may not have extensive knowledge of different PPIs, I recognize that some may be more beneficial in severe GI complications due to their unique mechanisms of action. I was not aware that rabeprazole was the sole PPI with mucus-protective action. In my orthopedic practice, NSAIDs and bisphosphonates contribute to GI-related side effects, underscoring the importance of considering these interactions in patient care.

Dr. Manoj Jain, (MS Ortho)

I prescribe bisphosphonates to less than half of the patients, and I am aware of their varied administration methods. I acknowledge that oral bisphosphonates tend to be poorly absorbed and may cause esophageal irritation; the long-term use can cause cancer. When GI side effects occur after bisphosphonate treatment, I prefer PPIs for their efficacy. PPIs inhibit gastric acid secretion and protect the gut mucosa. I started PPI therapy on day 1, which, in my experience, is the ideal approach. Fewer than 50% of my patients may experience GI issues related to bisphosphonates, and I am aware that high-dose PPIs can improve symptoms and reduce complications in peptic ulcer disease. More than 50% of my daily OPD patients have comorbid conditions, emphasizing the need for comprehensive GI care. I am aware of different PPIs, and, I recognize that some may be more beneficial in severe GI complications due to their unique mechanisms of action. I knew that rabeprazole was the sole PPI with mucus-protective action. In my practice, NSAIDs and bisphosphonates contribute to GI-related side effects, underlining the importance of considering these interactions in patient care.

Dr. Nirmal Dhumane, (MBBS, DNB Ortho)

I prescribe bisphosphonates to <50% of patients. I am aware of the variations among different bisphosphonates and their diverse administration methods, including the challenge of poor absorption and potential esophageal irritation. While oral bisphosphonates can cause gullet irritation and heartburn, I was not aware of a direct association with esophageal cancer in long-term use. In cases where patients develop GI side effects post-bisphosphonate treatment, I prefer PPIs due to their long-lasting inhibition of gastric acid secretion and their protective effect on the gut mucosa. My ideal approach is to initiate PPI therapy at the outset of bisphosphonate treatment to prevent complications. Although I suspect GI issues in some patients, the prevalence remains below 50%. I am aware that high-dose PPIs can improve symptoms and reduce the occurrence of complications of peptic ulcer disease in individuals at higher risk. Over half of the patients I see daily in my OPD have comorbid conditions such as diabetes mellitus (DM), HTN, and cardiac disorders. I have a good understanding of different PPIs and their metabolic pathways, enabling me to select the most suitable PPI based on the specific patient's needs. Some PPIs may offer greater benefits for severe GI complications

due to their mechanism of action, and I consider this when choosing the appropriate PPI. I am also aware that rabeprazole is the only PPI with mucus-protective action, making it a valuable choice. I have observed that NSAIDs and bisphosphonates are among the other drugs leading to GI-related side effects.

Dr. Piyush Kumar Misra, (MBBS, D. Ortho, M. C. H. Ortho)

I give bisphosphonates to less than half of my patients, and I know that there are various ways to take them. I understand that taking bisphosphonates by mouth is not always the best because they do not get absorbed well and can irritate the esophagus, possibly leading to cancer with long-term use. If patients have stomach issues from taking bisphosphonates, I prefer PPIs because they work well. PPIs reduce stomach acid and protect the stomach lining. I usually start PPI treatment right from the beginning, as I believe that it is the best approach based on my experience. Not all, but more than half of my patient's face stomach problems due to bisphosphonates. I also know that using high-dose PPIs can help with symptoms and lower the risk of complications from peptic ulcers. More than half of the patients I see every day have other health issues, which make it important to provide thorough care for their stomach and digestive health. I know that there are different types of PPIs, and I understand that some may be more helpful for severe stomach issues due to their unique ways of working. I know that rabeprazole is the only PPI that has a protective effect on the stomach lining. I have noticed that stomach problems related to NSAIDs and bisphosphonates are common, so it is crucial to consider these interactions when taking care of patients.

Dr. Ankur Nanda, (MS Ortho)

In my practice, I prescribe bisphosphonates to <50% of patients. I am aware of various bisphosphonates and their administration differences. Oral bisphosphonates get poorly absorbed, causing gullet irritation. I was aware of the risk of cancer associated with its long-term use. I prefer PPIs for GI side effects. They offer long-lasting acid inhibition and protect the gut mucosa, initiated from day 1. While some patients may experience GI issues with bisphosphonates, the prevalence is <50%. I know high-dose PPIs can help with peptic ulcer disease. A significant number of patients in my OPD have comorbid conditions. I am familiar with different PPIs and their pathways, considering their mechanisms. The mucus-protective action of rabeprazole is valuable. In my practice, NSAIDs and bisphosphonates can lead to GI issues.

Dr. Manas Maji, (MBBS, DNB Ortho)

I prefer bisphosphonates for more than half of my patients. I know about the various types of bisphosphonates and how they are taken differently. Oral bisphosphonates can be challenging to absorb and might irritating the throat. I am aware of the potential cancer risk associated with their long-term use. When patients experience GI side effects, I prefer using PPIs, as these provide long-lasting acid control and safeguard the stomach lining, and I start this treatment right from the beginning. While some patients may have GI problems due to bisphosphonates, it affects less than half of them. I understand that high-dose PPIs can be beneficial for those with peptic ulcer disease. I am knowledgeable about different PPIs and their specific actions, considering their mechanisms. The mucus-protective action of rabeprazole is particularly valuable. In my practice, I have observed that both NSAIDs and bisphosphonates can lead to GI issues.

Dr. Joydeep Das, (MS, Orthopedics)

In my orthopedic practice, I prescribe bisphosphonates to <50% of patients. I am aware of the different bisphosphonates and their varied administration methods, along with the challenges of oral bisphosphonates. Long-term use is associated with an increased risk of esophageal cancer. When patients develop GI side effects, I prefer PPIs due to their properties of inhibiting gastric acid secretion and protecting the gut mucosa. I initiate PPI therapy from the outset of bisphosphonate treatment. The prevalence of severe GI issues due to bisphosphonates remains below 50%. High-dose PPIs effectively improve symptoms and reduce ulcer complications in high-risk patients. Over 50% of my patients have comorbid conditions. I am knowledgeable about different PPIs and their metabolic pathways, allowing me to select the most suitable one. Some PPIs are more beneficial for severe GI complications due to their mechanism of action. Rabeprazole, as the only PPI with mucus-protective action, is a valuable choice. I have observed that NSAIDs and bisphosphonates contribute to GI-related side effects in orthopedic practice.

Dr. Jyoti Prakash, (MS)

I prescribe bisphosphonates to the majority of my patients. I am also familiar with the various types of bisphosphonates and how they are taken, as well as the challenges of using oral bisphosphonates. Using them for a long time can increase the risk of esophageal cancer. When patients experience stomach issues, I prefer PPIs because they can reduce stomach acid and protect the stomach lining. I started PPI treatment right at the beginning of bisphosphonate therapy. Severe stomach problems due to bisphosphonates occur in less than half of my patients. High-dose PPIs are effective in relieving symptoms and preventing ulcer complications, especially in high-risk patients. More than half of my patients have other health conditions, so it is crucial to provide comprehensive care for their stomach and digestive health. I know about different types of PPIs and how they work in the body,

allowing me to choose the most suitable one. Some PPIs are particularly helpful in severe stomach complications due to their mechanism of action. Rabeprazole stands out as the only PPI that protects the stomach lining with mucus, making it a valuable choice. In my orthopedic practice, I have noticed that stomach issues related to NSAIDs and bisphosphonates are common.

Dr. Shashank Kanchan, (MBBS, MS)

In clinical practice, I prefer bisphosphonates for less than half of my patients. I know that there are bisphosphonates and their administration methods, including the challenges of oral bisphosphonates and the potential risk of esophageal cancer with long-term use. When patients experience stomach issues, I prefer PPIs to reduce stomach acid and protect the stomach lining. I started PPI therapy at the beginning of bisphosphonate treatment. Severe stomach issues due to bisphosphonates are more than 50%, and high-dose PPIs can effectively relieve symptoms and reduce ulcer complications in high-risk patients. Over 50% of my patients have additional health conditions, so I choose the most suitable PPI based on my knowledge of their differences. Rabeprazole, with its mucus-protective action, is a valuable option. Furthermore, to my knowledge, NSAIDs and bisphosphonates can contribute to stomach-related side effects in orthopedic practice.

Dr. Saravanakumar P, (MS Ortho)

I recommend bisphosphonate to <50% of my patients on day 1. I believe that there are different types of bisphosphonates available with different ways of administration: Among them, the oral form is poorly absorbed by the body and can cause gullet irritation. If used for a long time, it may result in gullet cancer. Preferably, I use PPIs to reduce GI complications related to bisphosphonate. My advice will be to use PPIs on day 1 of bisphosphonate treatment. I suspect bisphosphate causes serious GI damage in more than 50% of the patients. I think that high-dose PPIs can help reduce the occurrence of complications from peptic ulcers. And to my knowledge, more than 50% of the patients coming on OPD are suffering from other comorbid conditions. I am also aware of various PPIs and their metabolic pathways. In addition, I know that rabeprazole is the only PPI that has mucus-protective action. In the case of GI-related complications in orthopedic practice, I think that both NSAIDs and bisphosphonates are responsible.

Dr. Muhammad Irshad Alam, (D Ortho, DNB Orthopedics)

I prefer bisphosphonate <50% for my patients on day 1. There are different types of bisphosphonates available with different methods of administration; among them, the oral form is poorly absorbed by the body, causing gut irritation. If used for a long time, it may result in gut cancer. Preferably, I use PPIs to reduce GI complications related to bisphosphonate. My advice will be to use PPIs on day 1 of bisphosphonate treatment. I suspect that bisphosphate is responsible for <50% of serious GI damage in my patients. I do not think that high-dose PPIs can help reduce the occurrence of complications from peptic ulcers. <50% of the patients coming on OPD are suffering from other comorbid conditions. I know about various PPIs and their metabolic pathways. I also know about rabeprazole being the only PPI that has mucus-protective action. In the case of GI-related complications, I think that both NSAIDs and bisphosphonates have roles.

Dr. Tushar Mondal, (MS Orthopedics)

I prescribe bisphosphonate for <70% of my patients from day 1. I know about the different types of bisphosphonates available with different methods of administration, among them oral form is poorly absorbed by the body, causing gullet irritation. If taken for a long period, it may result in gullet cancer. I use PPIs for managing GI side effects after bisphosphonate treatment due to their long-lasting acid inhibition and mucosa protection. My advice will be to use PPIs on day 1 of bisphosphonate treatment. I suspect bisphosphate is responsible for <50% serious GI damage in my patients. I do not believe that high-dose PPIs can help reduce the occurrence of complications of peptic ulcers. More than 50% of the patients coming on OPD are suffering from other comorbid conditions. I know about various PPIs and their metabolic pathways. I also know about rabeprazole being the only PPI that has mucus-protective action. In case of GI-related complications, both NSAIDs and bisphosphonates are responsible.

Dr. Abani Kanta Mishra, (MS Ortho)

I prefer bisphosphonate <50% for my patients on day 1. I know that there are different types of bisphosphonates available with different methods of administration; among them, the oral form is poorly absorbed by the body, causing gut irritation. If used for long, it may cause gullet cancer. Preferably, I use PPIs to reduce GI complications related to bisphosphonate. My advice will be to use PPIs from the 1st day of bisphosphonate treatment. I think bisphosphonate treatment without PPI causes serious GI damage in <50% of my patients. High-dose PPIs can help reduce the occurrence of complications of peptic ulcers. Fewer than 50% of the patients with OPD are suffering from other comorbid conditions. I know about various PPIs and their metabolic pathways. I also know about rabeprazole being the only PPI that has mucus-protective action. In the case of GI-related complications, I think that both NSAIDs and bisphosphonates have roles.

Dr. Sarat Chandra Mishra, (MBBS, MS Ortho)

I usually prescribe bisphosphonate for more than 70% of my patients from day 1. I know about different types

of bisphosphonates available with different methods of administration; among all of them, the oral form is poorly absorbed by the body and may cause gullet irritation. Long-term use of bisphosphonate may cause esophageal cancer. PPIs are to be used when reducing GI complications related to bisphosphonate treatment. I will prescribe PPIs only after the side-effects of bisphosphonate arise. It is responsible for more than 50% of severe GI damage in patients. I know that a high-dose PPIs can reduce the occurrence of peptic ulcer complications. More than 50% of my patients suffer from other comorbid conditions such as DM, HTN, and cardiac disorders. I also know about the existence of different PPIs and their metabolic pathways. I also know that rabeprazole is the only PPI with mucus-protective action. In my experience, for GI-related complications, bisphosphonates are responsible.

Monoranjan How Bora, (MS Ortho)

I typically prescribe bisphosphonates to <50% of my patients right from the beginning. I am well-versed in the various types of bisphosphonates available, each with distinct methods of administration. Notably, the oral form is poorly absorbed, potentially causing esophageal irritation and, in the long term, a risk of esophageal cancer. To mitigate GI complications related to bisphosphonate treatment, I prescribe PPIs from day 1. Bisphosphonates account for <50% of severe GI damage among my patients. I think the occurrence of peptic ulcer complications can be reduced by high-dose PPIs. Given that over 50% of my patients have comorbid conditions such as DM, HTN, and cardiac disorders, I am attentive to potential interactions and tailor my prescriptions accordingly. Furthermore, I am aware of the different PPIs and their metabolic pathways, acknowledging that rabeprazole stands out as the only PPI with mucus-protective action. Through my experience, I have associated GI-related complications with both NSAIDs and bisphosphonates.

Dr. Vivek Agrawal, (MBBS, MS Ortho)

I exercise caution when prescribing bisphosphonates, typically administering them to less than half of my patients. I am aware of the potential GI side effects, particularly esophageal irritation, and ulceration, and I proactively prescribe PPIs from the outset to minimize these risks. <50% of patients have comorbidities such as diabetes, HTN, and cardiac disorders. While bisphosphonates contribute to a minority of severe GI complications among my patients, I recognize the potential for peptic ulcer complications and advocate for high-dose PPI therapy to mitigate this risk. Among the various PPIs available, I favor rabeprazole for its unique mucus-protective action. My experience has highlighted the potential for GI complications with both NSAIDs and bisphosphonates, prompting a cautious and individualized approach to treatment.

Dr. Pravat Kusum Mahapatra, (MS Ortho)

I approach bisphosphonate prescriptions with caution, typically opting to administer them to less than half of my patients. I am well aware of the potential GI side effects, especially esophageal irritation and ulceration. To proactively minimize these risks, I prescribe PPIs from the outset. <50% of my patients have comorbidities such as diabetes, HTN, and cardiac disorders. Although bisphosphonates contribute to a minority of severe GI complications among my patients, I acknowledge the potential for peptic ulcer complications. Therefore, I advocate for high-dose PPI therapy to mitigate this risk. Among the various PPIs available, I prefer rabeprazole due to its unique mucus-protective action. My experience has highlighted the potential for GI complications with both NSAIDs and bisphosphonates, prompting me to adopt a cautious and individualized approach to treatment.

Dr. Soudip Sinha, (MS Ortho)

I prescribe bisphosphonates to more than 70% of my patients. I know that they might cause stomach problems, such as irritation and ulcers, so I start them on medicines called PPIs to lower these risks. More than half of my patients have other health issues such as diabetes, high blood pressure, and heart problems. Even though bisphosphonates rarely cause severe stomach issues for my patients, I know that they could lead to ulcers. That is why I suggest using a strong medicine called PPIs to reduce this risk. I like rabeprazole among the different PPIs because it protects the stomach lining. From my experience, both NSAIDs and bisphosphonates can cause stomach problems, so I am careful and tailor the treatment for each person.

Dr. Alind Kishore, (MS Ortho)

To less than half of my patients, I prescribe bisphosphonate, as I am well aware of the GI risks related to long-term use of bisphosphonates, and I also know that in some cases, it causes esophagus cancer. To counter these risks usually, I prescribe PPIs on the 1st day of the treatment itself. I am aware of the different available PPIs and their metabolic pathways. I also know that some PPIs show more benefit in severe GI complications due to their specific mechanism of action. Up-dosing of PPIs can also improve GI risk-related symptoms and reduce the occurrence of peptic ulcers. Among all the available PPIs, rabeprazole is the only one with mucus-protective action. And to be precise, not only bisphosphonate but also NSAIDs are responsible for GI risk.

Dr. Premesh Kumar Sarkar, (MBBS, MD)

In more than 70% of cases, I prescribe bisphosphonates. I also know about different bisphosphonates and their different types of administration. Bisphosphonates are also

related to severe GI complications like peptic ulcers and in some cases, esophagus cancer. To overcome this problem, I mostly prescribe PPIs from the start, as I know PPIs not only reduce acid secretion but also protect the mucus layer of the GI tract. If PPIs are given in high doses, it can also reduce the symptoms and occurrence of severe GI issues. It is well known to me that there are different PPIs available with different mechanisms of action, and some of them show more benefits. Rabeprazole is the one with exclusive mucus-protective action. Not just bisphosphonates, it is well known that NSAIDs are also responsible for GI-related risks.

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