iJRASET
International Journal For Research in Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 12 **Issue:** VII **Month of publication:** July 2024

DOI: https://doi.org/10.22214/ijraset.2024.63776

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International Journal for Research in Applied Science & Engineering Technology (IJRASET)
ISSN: 2321-9653; IC Value: 45.98; SJ Impact Factor: 7.538
Volume 12 Issue VII July 2024- Available at www.ijraset.com

Investigating the Progression of Lifestyle Changes in Peptic Ulcer

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Abstract: ***The risk of developing Peptic Ulcer Disease (PUD) was shown to be associated with genetic inheritance, lifestyle and social status of the patients. Unhealthy lifestyle habits and failure in coping with have been closely associated with the occurrence of PUD In contrary, limiting the see of analgesic drugs and glucocorticoids, controlling environmental and socio-economic factors that predispose to H. Pylori infection, having a balanced diet, exercising regularly. Coping successfully with stress, avoiding smoking, limiting alcohol intake and getting sufficient night sleep are essential in prevention and healing of PUD.***

Keywords: H. pylori, NSAIDS, Alcohol, nutrition, Physical activity, Sleep, Smoking, stress.

I. INTRODUCTION

Introduction Peptic Ulcer are open blisters that develop on the inside filling of oesophagus, stomach and the upper portion of the small intestine(1) The most common symptom of a peptic ulcer abdominal pain Ulcers are deep lesions piercing through the entire consistence of the gastrointestinal tract(GIT) mucosa and muscularis mucosa. Peptic ulcer has plainly been a complaint of the twentieth century. There are different types of ulcers most common are peptic ulcer gastric ulcer, which appeared to be due to damage to the filling of the stomach, and duodenal ulcer, which was associated with inordinate acid stashing by the stomach. The etiology of peptic ulcer was fiercely debated. It's believed that peptic ulcers develop due to an imbalance between aggressive factors and defensive factors.

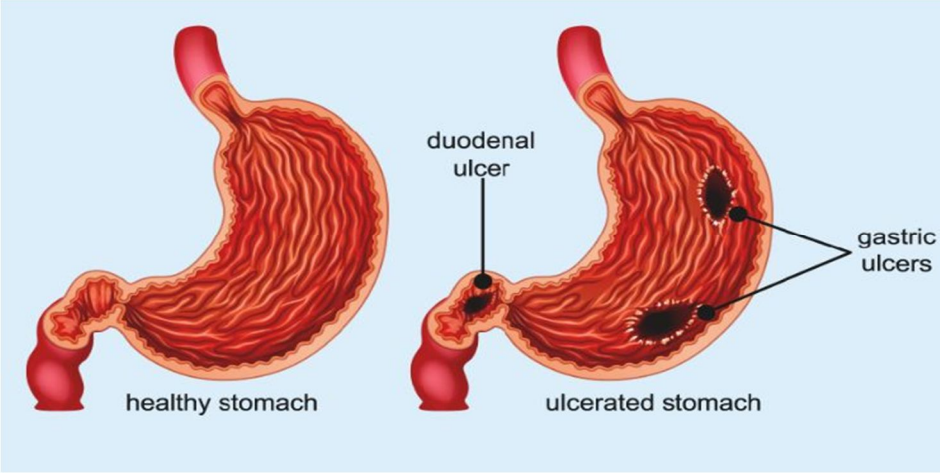

Fig no.1: Representation of peptic ulcer

Various factors are implicated that play a pivotal role in the pathogenesis of ulcerations like, sedentary life style, alcohol intake, spicy food, drugs and various bacterial infections. (5) Moreover, several endogenous substances have been identified and are reported to be involved in the production of gastrointestinal lesions in animals. The more important ones include some of the bacterial infection, various drugs and chemicals, gastric secretion, lipid metabolites, neuropeptides, inflammatory mediators and reactive free radicals. Oxidative stress has emerged as one of the major pathogenic factors in progression of ulcer that directly impaired the cellular functions and promotes cellular organelles damage in the cells, including mitochondria, liposome's, and nucleus. Also, NO is accepted as vital mediator of GIT mucosal defence as decreased NO generation or synthesis contribute to the pathogenesis of ulceration. (6)

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Aggressive factors	Defensive factors
Gastric acid	Mucus
Pepsin	Bicarbonate
H.Pylori	Prostaglandin
NSAIDS	Antioxidant enzymes
Oxidative stress	

Table no. 1

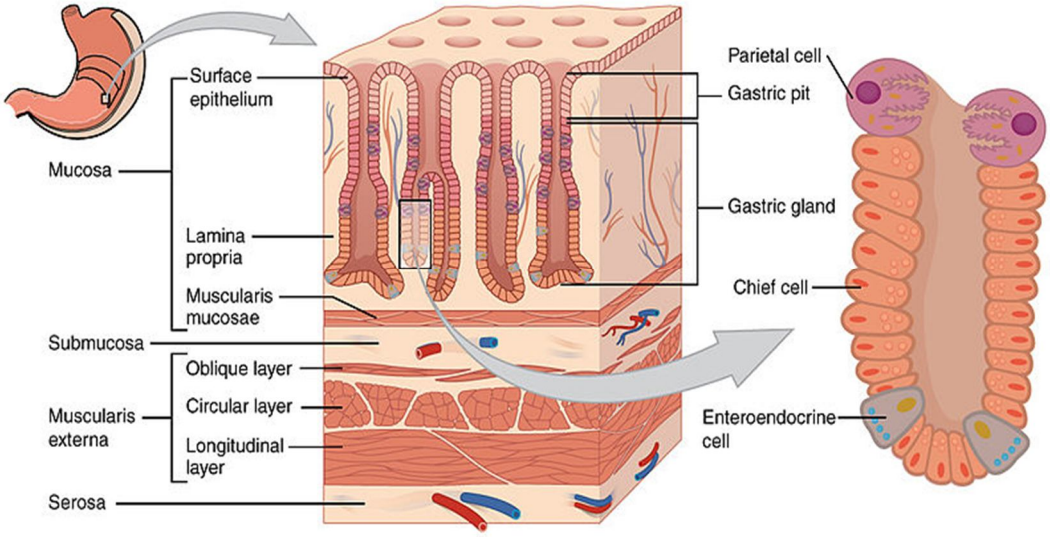

Fig no. 2 : Gastric glands

II. SYMPTOMS

1) Gas formation
2) Belching
3) Nausea
4) Vomiting
5) Pain in upper abdomen
6) Decrease appetite
7) Heartburn
8) Intestinal disorder (8, 9)

III. TYPES

Peptic ulcers classified based on region or location of illness:

1) *Oesophageal Ulcers:* Oesophageal ulcers are lesions that occur in the oesophagus (the food pipe). These are most commonly formed at the end of the food pipe and can be felt as a pain right below the breastbone, in the same area where symptoms of heartburn are felt. Oesophageal ulcers are associated with acid reflux or GERD, prolonged use of drugs like NSAIDs, and smoking (10)
2) *Gastric Ulcers:*

- Commonly found on lesser curvature in close proximity to antral junction.
- Less common than duodenal ulcers.
- Prevalent in women, older adults, persons lower socioeconomic class (11)

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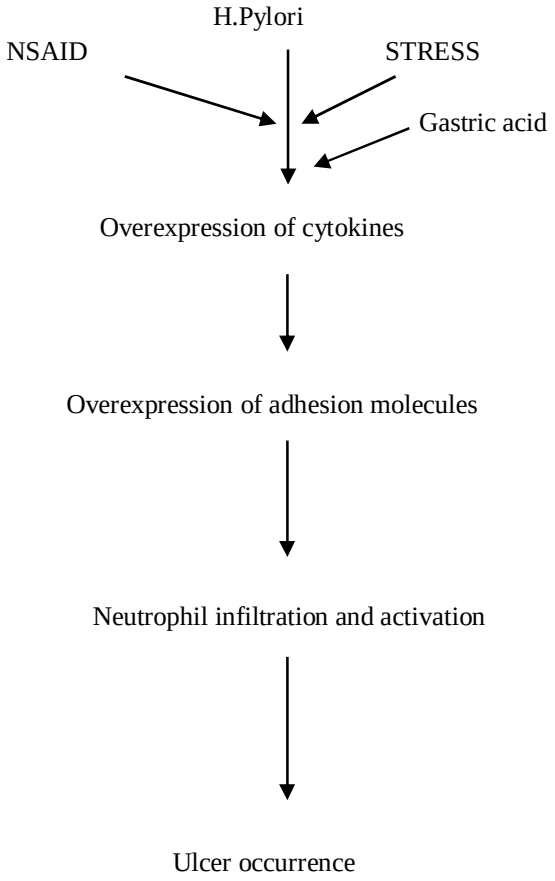
3) *Duodenal Ulcer:* A duodenal ulcer is a sore that forms in the lining of the duodenum. Duodenum is the first part of small intestine. This is the part of digestive system that food travels through, after it leaves your stomach.

IV. MECHANISM OF PEPTIC ULCER OCCURRENCE



V. DRUGS FOR PEPTIC ULCER(20)

1) Gastric acid secretion inhibitor-
- H2 Antihistamine Ex-Cimetidine Ranitidine, Famotidin
- Anticholinergic Ex-Pirenzepine, Propantheline, Oxyphenoniun
- Proton pump inhibitor Ex- Omeprazole Lansoprazole, Pantoprazole
- Prostaglandin analogue: Ex- Misoprostol

2) Gastric Acid Neutralizer (Antacid)-
- Systemic: Ex- Sod Bicarbonate, Sod. Citrate
- Non-systemic Ex-Mag Hydroxide, Mag. Trisilicate, Cal Carbonate

3) Ulcer Protective-
- Ex- Sucralfate, Collidal Bismuth Subcitrate

4) Anti H.pylori drugs
- Ex- Amoxicillin, Clarithromycin, Tetracycline, Metronidazole

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VI. TREATMENT

Medicine	Mechanism of action	Adverse effect
Proton pump inhibitors Omeprazole Lansoprazole Rabeprazole Esomeprazole Pantoprazole	Inhibition of the gastric H^+/K^+ ATPase (proton pump) enzyme system	Headache Abdominal pain Diarrhea Nausea Vomiting Constipation(14,15)
H2 receptor blocker Cimetidine Famotidine Nizatidine Ranitidine	Bloking the action of histamine at the histamine H2 receptors of parietal cells	Headache Anxiety Depression Dizziness(16)
Antacids Aluminium Hydroxide Magnesium hydroxide	Increases gastric PH to greter than four and inhibits the proteolytic activity of pepsin	Vomiting Nausea Constipation Abdominal cramping Diarrhea (17)
Ulcer Protective Sucralfate Colloidal bismuth subcitrate	Stimulate mucus productionand enhance blood flow through out the lining of gastrointestinal track	Constipation Diarrhea Headache (18,19)

Table no.2: Treatment of peptic ulcer

1) *Life Style Changes:* Doctors used to recommend eating bland foods with milk and only small amount of food with meal people who find that certain foods cause irritation should discuss the problem with their physicians. Smoking has been shown to delay ulcer healing and has been linked to ulcer recurrence, Therefore people with ulcer should not smoke. (31.32)
2) *Quality of evidence:* Medline was searched from January 1966 to December 2001 for articles on the relationship between diet and lifestyle and DU using the key words duodenal ulcer and diet, fibre, or lifestyle. Other articles were found from the references of the first articles generated by the search. Evidence that diet and lifestyle are associated with DU arose mainly from three case-control and three prospective studies (level II evidence) and from expert opinion (level III evidence). Other reports discussing peptic ulcer in general without making the important distinction between duodenal and gastric ulcers were not included. A few studies investigate DU prospectively, a method less prone to bias, but they examined associations in men only and their results might not apply to women.
3) *Avoid the use of anti-inflammatory drugs:* Parents taking medications such as nonsteroidal anti-inflammatory drugs, the anticoagulant vortilin, corticosteroids, or the anti-osteoporosis drug alendronate can use Truk Voluntarily. Nonsteroidal anti-inflammatory drugs are effective drugs that have antibacterial and antifungal properties as well as anti-inflammatory properties. They are used in many medical scenarios, including arthritis and other male diseases. Unfortunately, their use is limited due to their ability to cause intestinal inflammation. Approximately 25% of long-term users develop gastrointestinal disease. (31,32)
4) *Lifestyle changes:* Doctors recommend eating junk food and dairy and eating only small amounts. People who find that certain foods cause irritation should talk to their doctor. Smoking has been shown to delay ulcer healing and is associated with stomach ulcers, so people with this condition should not smoke. (31.32 His.)

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5) *Diet:* A diet rich in fiber reduces the risk of colon cancer by approximately 50%. The fiber in fruits and vegetables is particularly protective, and the vitamin A found in many of these foods can reduce ulcer symptoms and actually stimulate stomach acid production, even if a small amount (2-3 cups per day) doesn't seem like enough to be a problem. But yogurt can cause stomach upset because it contains probiotics (compartment 13/21 and caffeine-free), soda contains citric acid, and fruit juice, which causes more of the acids. Drinking water can cause inflammation, and drinking more than 3 cups of coffee a day can lead to H. pylori infection. (31,32.
6) *Psychological Factors:* Stress: Many diseases can be caused by the body's response to stress. There is some debate as to whether psychological stress can play a role in the development of stomach ulcers. Some studies still suggest that stress can make you more prone to developing ulcers or prevent existing ulcers from healing. Some people believe that the link between stress and ulcers is so strong that people with ulcers should be educated about mental illness. Stress can slow down your digestive system and cause more stomach acid to build up in your stomach. Increased stomach acidity can worsen or exacerbate existing ulcers. (31.32)
7) *Smoking:* Cigarette smoking appears to be a risk factor for the development and recurrence of gastric freezing. The incidence of stomach ulcers is higher in smokers than in non-smokers. Compared to non-smokers, smokers are twice as likely to develop stomach ulcers. Smoking can cause ulcers, delay ulcer healing, and increase the risk of recurrent stomach ulcers. Smoking can have inconsistent effects on stomach acid secretion. (31.32)
8) *Dietary Fiber:* Fibers vary greatly in their physical properties and chemical composition. Crude fiber consists of cellulose and lignin. Dietary fiber includes crude fiber, non-cellulosic polysaccharides, hemicellulose, pectin, and gums. 15 Dietary fiber can be classified according to its solubility in water. Structural fibers (cellulose, lignin, and some hemicelluloses) are insoluble. Natural gelling fibers, pectins, gums, adhesives, and other hemicelluloses are soluble (22.24).
9) *Vitamin A:* The table summarizes the impact of micronutrients on the risk of DU in Health Studies. 21 Aldoori and colleagues 21 found an interaction between vitamin A and risk of DU (RR 0.39 for highest intake, 95% CI 0.20 to 0.76 or 26 769 IU/day). Vegetable sources of vitamin A (measured as carotenoids, specifically beta-carotene) reduced the DU RR (carotenoids: RR 0.69, 95% CI 0.35 to 1.34; beta-carotene: RR 0.60, 95% CI 0.20), but there was no such reduction in diet, excluding medications and multivitamins. There was also an association with risk of DU (RR 0.50 for highest quintile, 95% CI 0.26 to 0.93). Food sources for the retina include dairy products, eggs and organ meats. (24)
10) *Vit C and E:* All clinical studies show that people with endoscopic findings have lower vitamin C levels. It is inversely prop ortional to the risk of ulcer. Most vitamin C is water-soluble; This means that vitamin C is water soluble and cannot be stored b y the body for later use. According to new research, vitamin E can also be used in the treatment of diseases seen in humans. Peo ple with stomach problems can take vitamin E twice a month. Each dose is 400 mg. Vitamin E is fat soluble vitamin. (24,26)
11) *Alcohol and Coffee:* Alcohol and coffee (with or without caffeine) have been identified as risk factors for ulcer because they stimulate acid secretion, but findings have been inconsistent. A prospective study of 7624 Hawaiian men of Japanese descent, born between 1900 and 1919,22 showed that neither total alcohol nor consumption of particular kinds of alcohol were associated with risk of ulcer. Among health professionals, none of whom were heavy drinkers, alcohol consumption of more than 30 g/d (one drink contains roughly 15 g) had little effect on risk of ulcer.32 Moderate alcohol consumption might not affect risk of ulcer; alcohol abuse might cause gastritis and other disorders. Little association was observed between caffeine, caffeine-containing beverages (coffee, tea), and decaffeinated coffee and risk of ulcer among health professionals. (25,27)
12) *Physical Activity And Body Mass Index:* Studies investigating the effect of physical activity on DU risk are inconsistent, ran ging from no effect to a positive effect. A casecontrol study by Katschinski and colleagues33 found that the association betwee n physical activity and DU persisted even after accounting for social class and tobacco use, with the percentage of DU patients i n high employment being 38%. There is no record of any physical activity outside. In future studies. Cheng et al34 found that b oth moderate and active men had a 45% to 60% lower risk of ulcers. Crosssectional data from the UK Regional Heart Study35 s how that body mass index and the percentage of obese people decrease as physical activity increases, so the effect of the physic al index of DU would be the same as that of physical activity. (28,29,30)

VII. CONCLUSION

Dietary fiber may help prevent infections from developing or recurring. The type of fiber (soluble or insoluble) and its source (fruits , vegetables, legumes or grains) affect different diseases. Foods high in soluble fiber, such as oranges, carrots and beans, seem to be more effective in reducing the risk of ulcers. There is little information on the impact of diet and lifestyle on ulcer risk, especially in women, and more research is needed. Vitamin A also has antiinflammatory properties.

Other diet and lifestyle have limited risk of stomach ulcers, but quitting smoking may help heal bacteria and prevent stomach ulcers. The presence of fiber and consumption of green vegetables should be emphasized in dietary recommendations for ulcer patients. Pa tients who smoke should quit smoking.

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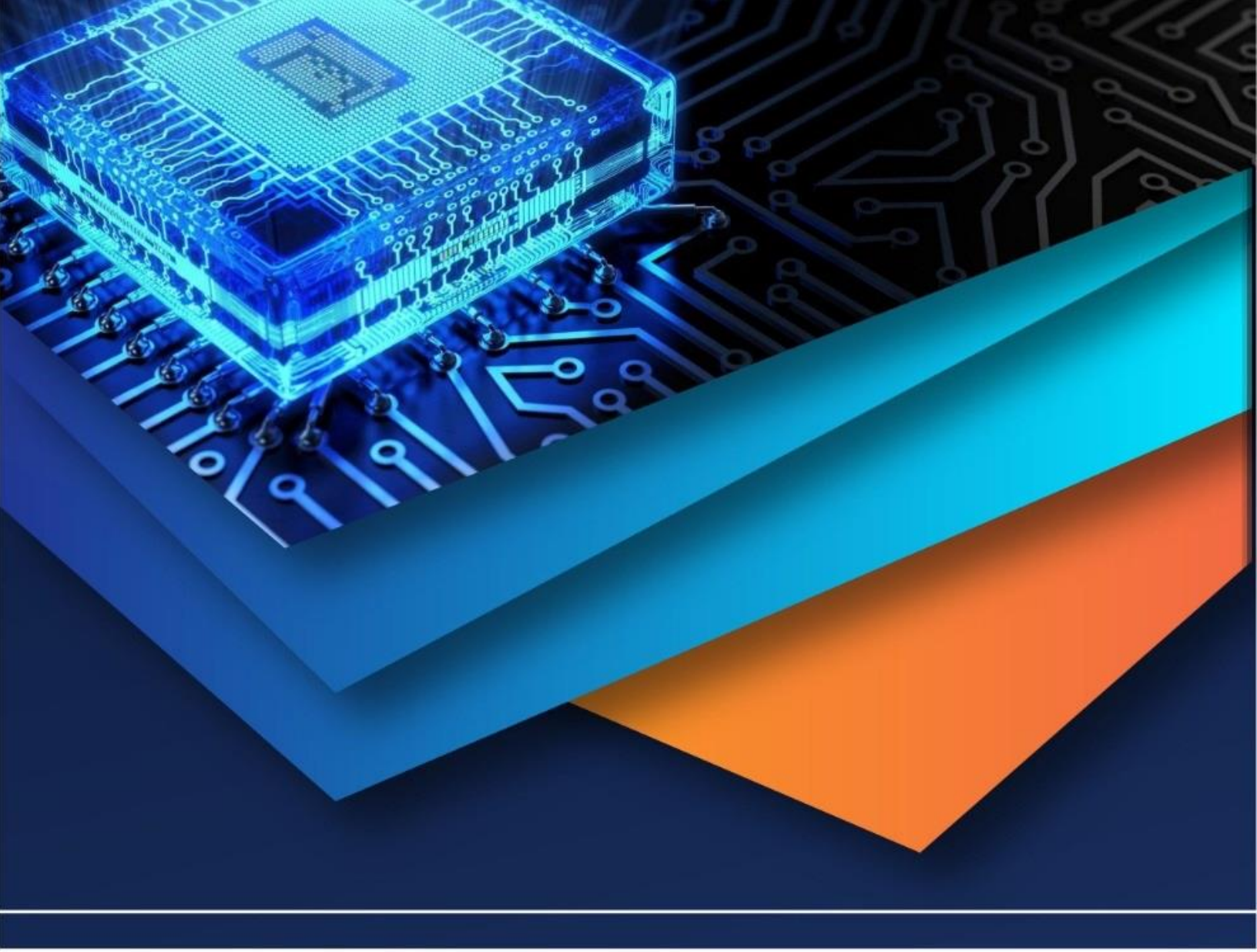

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