

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Second year MBBS (BATCH 50)

GIT Module

Case Based Learning (CBL)

Peptic Ulcer Disease

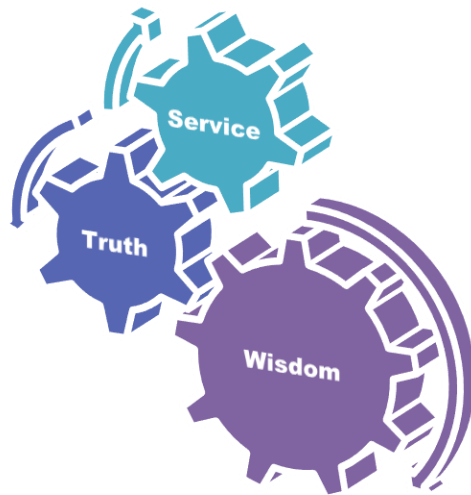
Dr Iqra Ayub
Date: 01-02-2024



Table of Contents

Sr #	Content	Slide #
1	Motto, Vision	4
2	Professor Umar Model of Integrated Lecture	5
3	Bloom's Taxonomy(Domains of learning)	6
4	Diagrammatic Representation of Blooms Taxonomy	7
5	Conducting CBL And its Learning Objectives	8,9,10,11
6	Horizontal Integration	13,14,
7	Core Concept	16-22
8	Vertical Integration	24-29
9	Biomedical Ethics(lesson of the day)	31-33
10	Suggested Research Article	35-37
11	Brainstorming(SEQ relevant with lecture)	24-29
12	Promoting IT and research culture(Digital Library)	37
13	References of this lecture	38

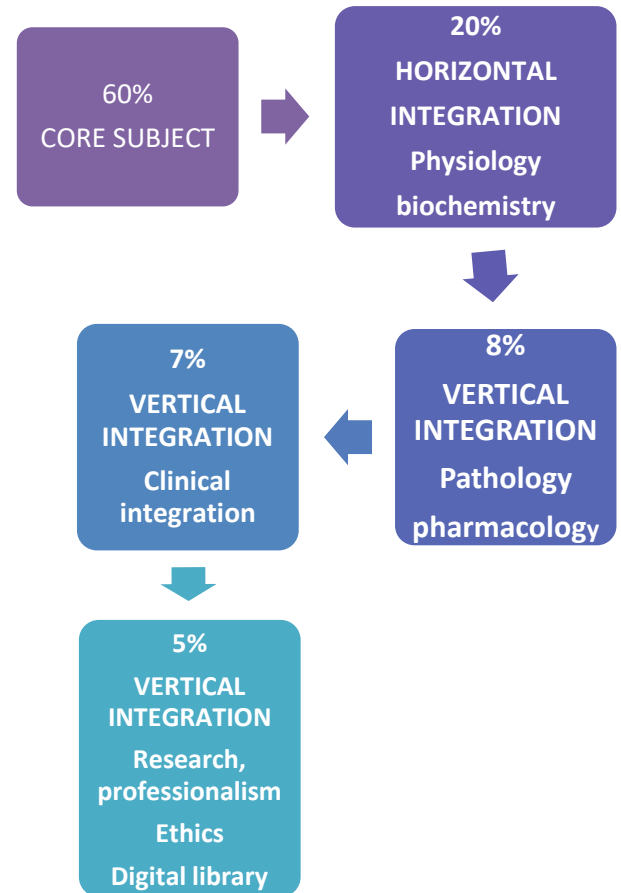
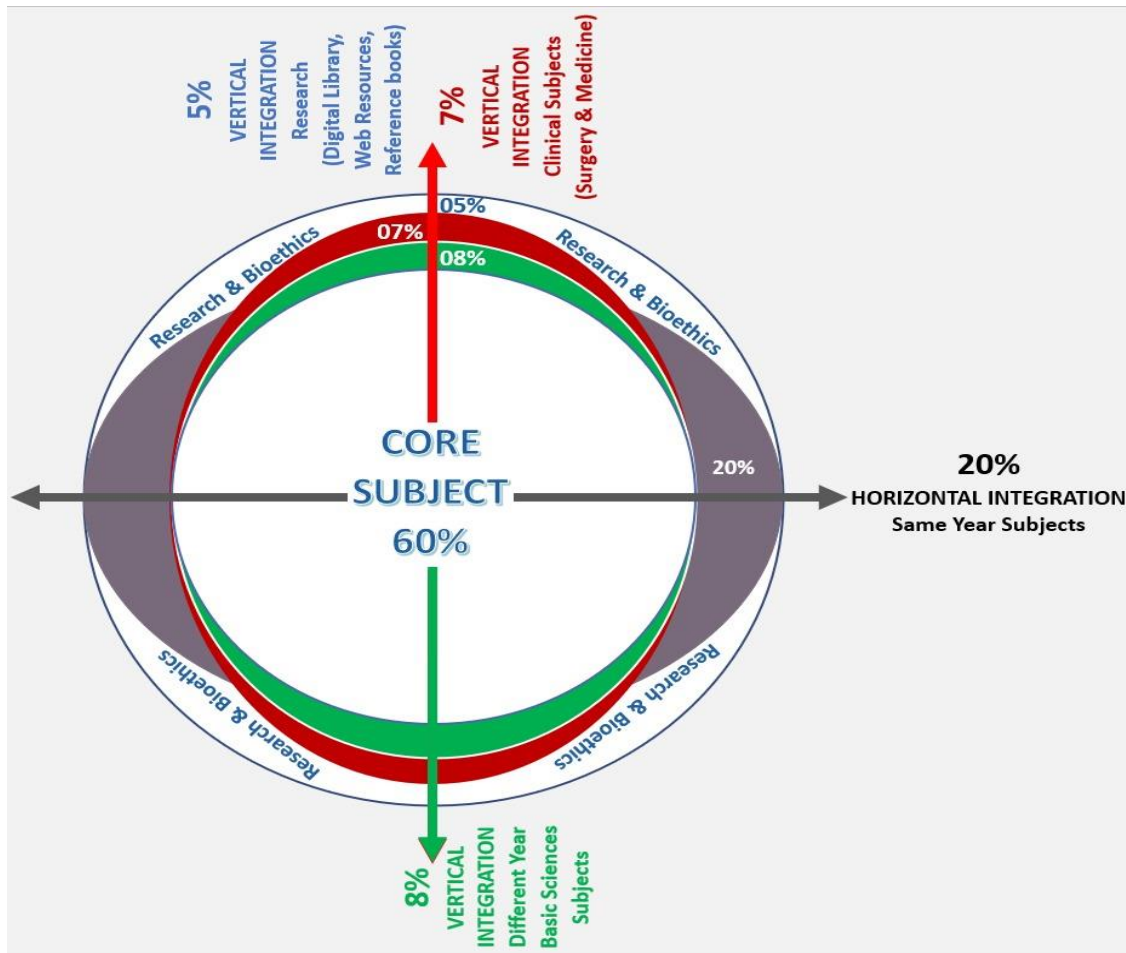
Motto



Vision; The Dream/Tomorrow

- To impart evidence based research oriented medical education
- To provide best possible patient care
- To inculcate the values of mutual respect and ethical practice of medicine

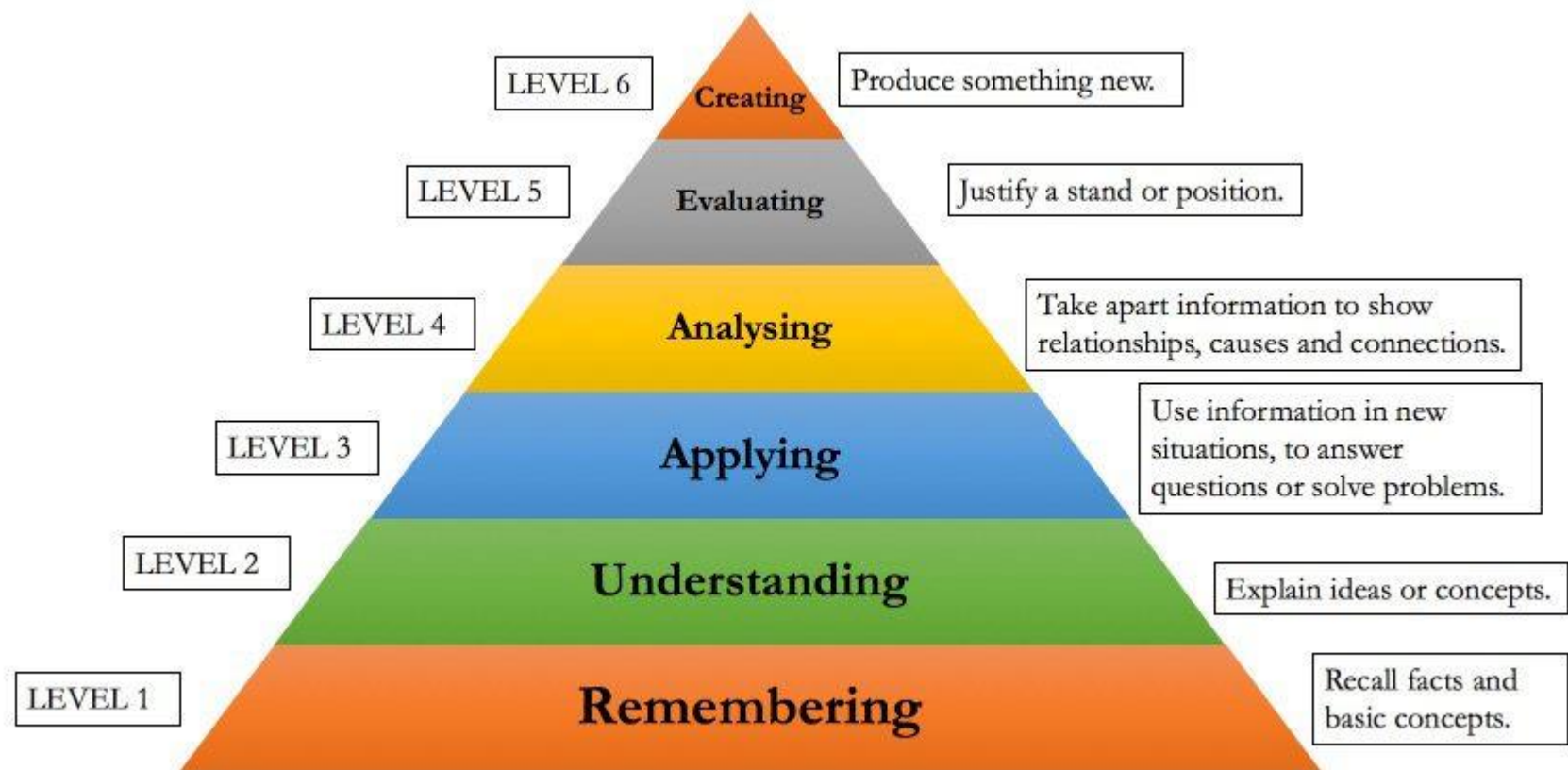
Professor Umar Model of Integrated Lecture



Bloom's Taxonomy : Domains Of Learning

Sr. #	Domain of learning	Abbreviation	Levels of the domain	Meaning
1	cognition	C	C1	Recall / Remembering
2			C2	Understanding
3			C3	Applying / Problem solving
4	Psychomotor	P	P1	Imitation / copying
5			P2	Manipulation / Follows instructions
6			P3	Precision / Can perform accurately
7	Attitude	A	A1	Receiving / Learning
8			A2	Respond / Starts responding to the learned attitude
9			A3	Valuing / starts behaving according to the learned attitude

Bloom's Taxonomy Of The Cognitive Domain



CBL

- Case-based learning (CBL) is a teaching method where students learn by analyzing real-life cases and applying their knowledge to solve problems or make decisions. CBL is often used in medical education, where students analyze patient cases to develop diagnostic and treatment skills.



Conducting CBL

- Identify the learning objectives
- Choose a case: Select a real-life case that is relevant to the learning objectives you have identified
- Present the case
- Analyze the case: Have students work in groups to analyze the case
- Develop hypothesis



Conducting CBL (Cont.)

- **Test hypotheses:** Have students test their hypotheses by using relevant diagnostic tests or other methods.
- Discuss the results
- **Evaluate learning:** Evaluate student learning by assessing their ability to analyze the case, develop hypotheses, and apply their knowledge of medical physiology to diagnose and treat the patient.

Learning Objectives

Sr. #	Learning Objective	Domain of Learning
1	To Discuss gross Anatomy of Alimentary tract	C2
2	To Discuss the Case Scenario and Diagnosis.	C2
3	To Explain the Peptic Ulcer disease and its causes.	C3
4	To Describe Pathophysiology of Peptic ulcer Disease	C2
5	To Explain Treatment of Peptic Ulcer Disease.	C3



Horizontal Integration

Anatomy of Digestive Tract Wall

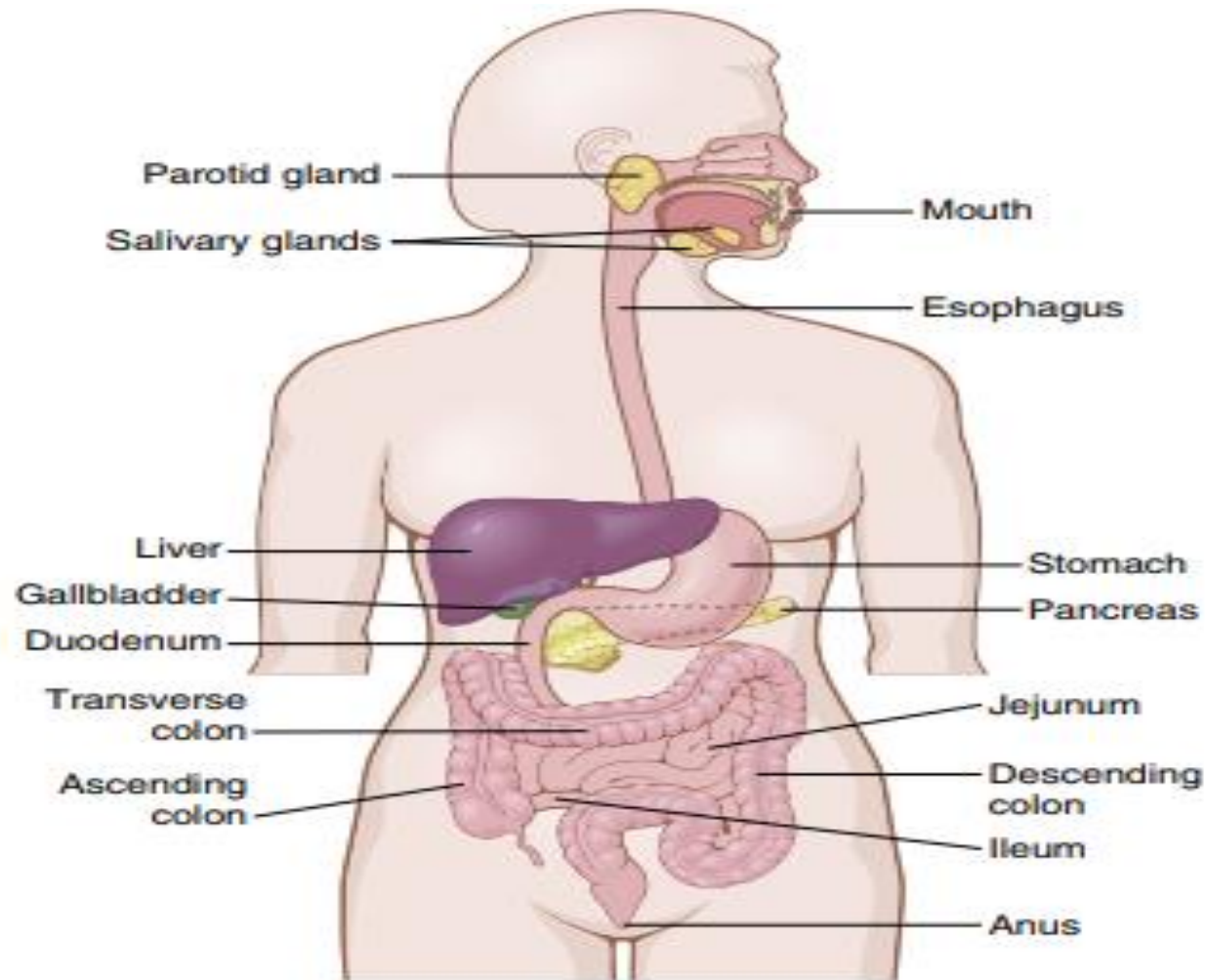
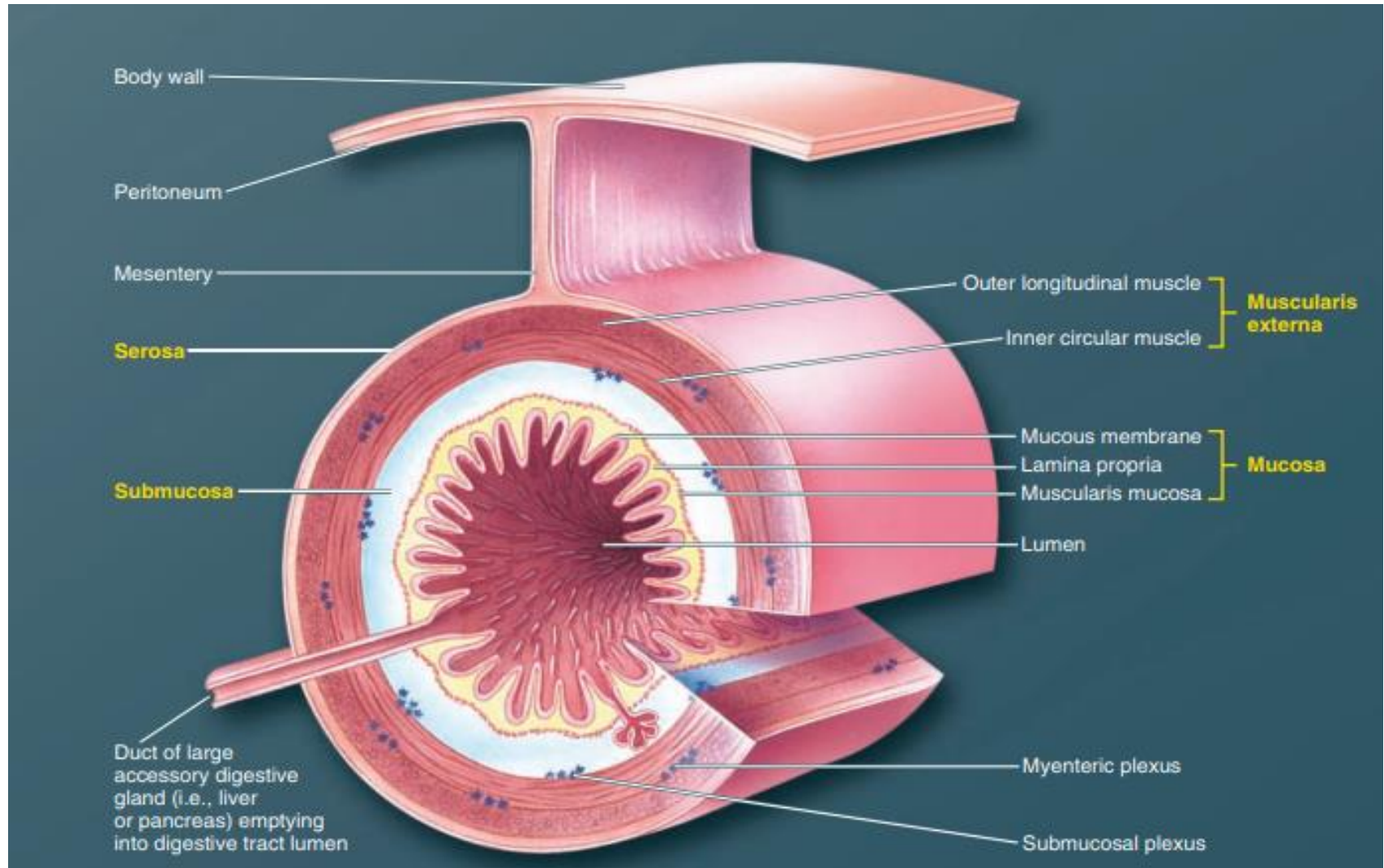


Figure 63-1. Alimentary tract.

Reference: Textbook of Physiology by Gyton and Hall, 14th edition Page No.788

Layers of Digestive Tract Wall



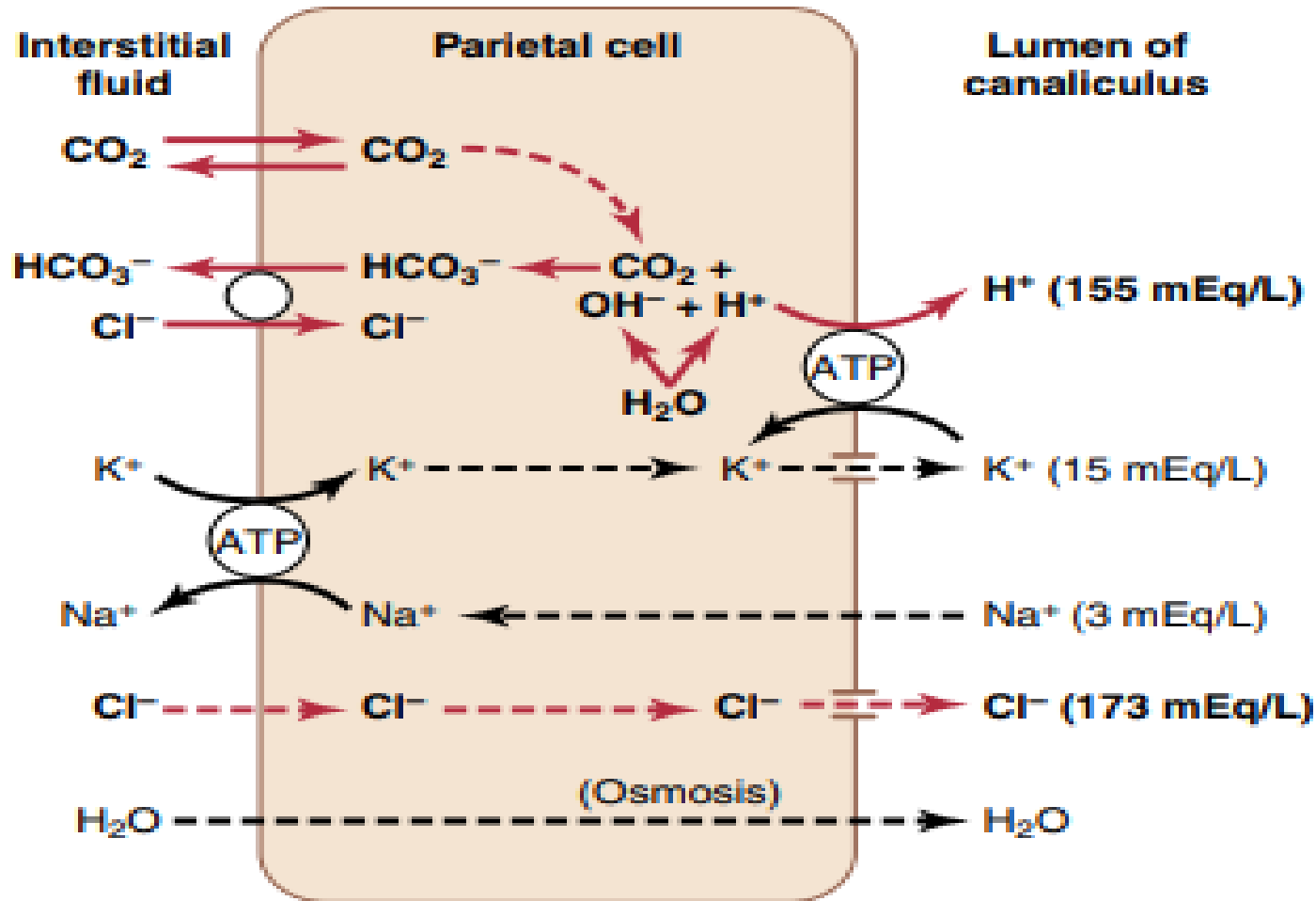


Core Knowledge

Physiology of Gastrointestinal tract

- Gastrointestinal tract is well supplied with **mucous glands** that protects mucosa from gastric acid.
- Duodenum is protected by the **alkaline small intestinal secretions**.
- **Sodium Bicarbonate** in Pancreatic secretion, Brunner's glands of the duodenal wall and bile coming from the liver **neutralize the hydrochloric acid of the gastric juice, inactivate pepsin and prevent digestion of the mucosa**.

Mechanism of Hydrochloric Acid Secretion



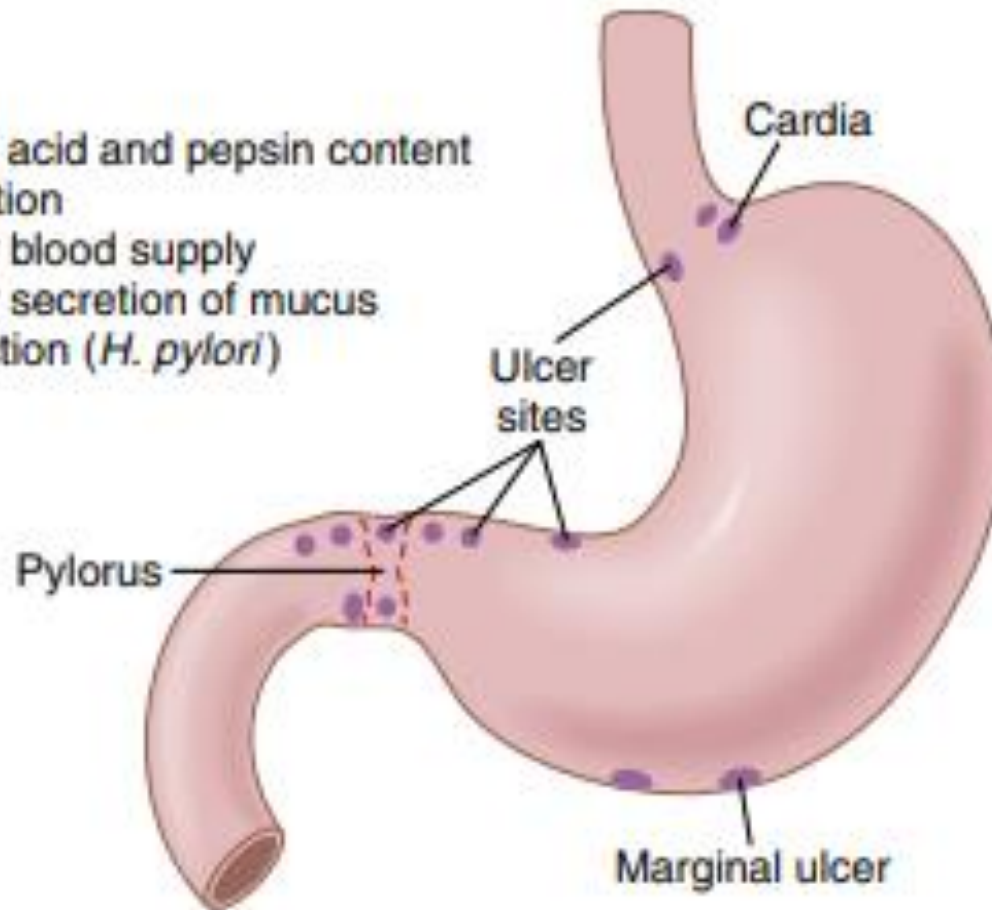
Peptic Ulcer Disease

A peptic ulcer is an excoriated area of stomach or intestinal mucosa caused principally digestive action of gastric juice or upper small intestinal secretions.

Causes and Most Frequent Locations of Peptic Ulcer Disease

Causes:

1. High acid and pepsin content
2. Irritation
3. Poor blood supply
4. Poor secretion of mucus
5. Infection (*H. pylori*)



Reference: Textbook of Physiology by Guyton and Hall, 14th edition Page No.834

Pathophysiology

- The basic causes of peptic ulceration is:
- (1) Gastroduodenal mucosal barrier damage
 - (2) Lack of neutralization of the Gastric Acid by Duodenal Juices.

Pathophysiology

- **Helicobacter pylori infection** breaks down the Gastroduodenal mucosal barrier and stimulates Gastric Acid Secretion.

- Factors that predispose to ulcers includes:
 - (1) smoking
 - (2) excess alcohol consumption
 - (3) Aspirin and other NSAIDs consumption

Treatment

- **Antibiotics** along with other agents to kill infectious bacteria
- Administration of an **antihistaminic acid suppressant drug**, especially ranitidine.



Vertical Integration

(With Clinical and Para-clinical Sciences)

Case Scenario

A 45 years male presented to medical opd with the complaint of pain epigastrium for two weeks. The pain was constant and mild in nature. Last night the pain aggravated after he took meal. His mother gave him a cup of milk saying that milk relieves the pain epigastrium. Also he took 2 teaspoonful of syrup Dijex MP after which he felt an improvement in the pain. The history revealed that he works in a software company and sits for a long time working on his desktop. He is non smoker and there is no other co-morbid condition. He is living a sedentary life style with no exercise and support. He likes eating spicy and hot foods along with the soft drinks and frequently visits restaurants. He daily takes 4 to 5 cups of tea and a cup of coffee.



Vertical Integration
with Internal
Medicine/
Gastroentrology

Answer

Peptic Ulcer Disease

Related Questions

Q.1. How do you control stomach acid production?

Related Questions

Q.1. How do you control stomach acid production?

Ans: Avoid eating spicy foods
Quit smoking
Weight reduction
Avoid eating high fat diet

Related Questions

Q.2. What is the relationship of the life-style with peptic ulcer?

Ans: 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 stress have been closely associated with the occurrence of PUD.

Related Questions

Q.2. What is the relationship of the life-style with peptic ulcer?

Ans: 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 stress have been closely associated with the occurrence of PUD.



Bioethics

Consent

Consent is the “autonomous authorization of a medical intervention by individual patients.”

Contd...

Q. A 35 years female presented with complaints of pain epigastrium, nausea and bloating. She used to eat hot and spicy foods alongwith 4 to 5 cups of tea and a cup of coffee. Doctor suspected peptic ulcer disease and recommended upper gastrointestinal endoscopy to confirm the diagnosis. Doctor explained the whole procedure of endoscopy but patient didn't allow the procedure.

Solution : The patient didn't allow the procedure . The doctor can't proceed according to the medical ethics.

Role of Family Physician in Peptic Ulcer Disease

- By **early diagnosis** of the disease based on symptoms, medical history, and physical examination
- By **medications** to treat peptic ulcer disease.
- Advising patients to **avoid smoking, reduce alcohol consumption**, and make dietary changes to minimize triggers such as spicy or acidic foods.

Suggested Research Article (To Promote Research Culture)

Review Article

Open Access

Peptic Ulcer Disease: Definition, Pathophysiology, and Treatment

Gudisa Bereda^{1*}

¹Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia.

*Corresponding Author: Bereda G, Department of Pharmacy, Negelle Health Science College, Guji, Ethiopia.
Email: gudisabareda95@gmail.com

Citation: Bereda G. Peptic Ulcer Disease: Definition, Pathophysiology, and Treatment. Journal of Biomedical and Biological Sciences. 2022;1(2):1-10.

Copyright: © 2022 Bereda G. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Received Date: 9th January, 2022

Accepted Date: 25th February, 2022

Published Date: 6th March, 2022

Abstract

Peptic ulcer can be delineated as the presence of a deep destruction of the mucosa of the stomach and/or duodenum, reaching beyond the muscularis mucosa, specifically to the muscle layer owing to the environmental gastric acid synthesis. Peptic ulcer, also known as stomach ulcer, is a breakage of mucosal lining of stomach, first section of the small intestine and sometimes in the lower esophagus. Caffeine and coffee are ubiquitously considered to antecedent or exaggerate pains, appear to have less consequence. Goals of management are to relieve ulcer pain, heal the ulcer, obviate ulcer recurrence, minimize ulcer-related complications, and eradicate *Helicobacter-pylori* in *Helicobacter-pylori*-positive patients.

Keywords: Definition; Pathophysiology; Peptic Ulcer Disease; Treatment

Abbreviations: ASA: Acetylsalicylic acid; COX: Cyclooxygenase; H₂RAs: Histamine type ₂ receptor antagonists; H₃CO₃: Bicarbonate; Hp: *Helicobacter pylori* (Hp) NSAIDs: Nonsteroidal anti-inflammatory drugs; Pgs: Prostaglandins; PCN: Penicillin; PPIs: Proton pump inhibitors; PUD: Peptic ulcer disease; RBC: Ranitidine bismuth citrate; ZES: Zollinger-Ellison syndrome

Take Home Message/ Crux of the Suggested Research Article

H. Pylori infection, NSAID use, genetic and environment factors contribute to cause peptic ulcer disease. H. Pylori eradication therapy is recommended for H. Pylori infected patients.

Triple therapy with PPI once/bd + clarithromycin 500 mg bd + amoxicillin 1 g bd or metronidazole 500 mg bd for 10 to 14 days. Metronidazole should be substituted for amoxicillin in penicillin allergic individuals.

How To Access Digital Library

- **Steps to Access HEC Digital Library**

1. Go to the website of HEC National Digital Library.
2. On Home Page, click on the INSTITUTES.
3. A page will appear showing the universities from Public and Private Sector and other Institutes which have access to HEC National Digital Library HNLDL.
4. Select your desired Institute.
5. A page will appear showing the resources of the institution
6. Journals and Researches will appear
7. You can find a Journal by clicking on JOURNALS AND DATABASE and enter a keyword to search for your desired journal.

References

Books:

- Guyton And Hall textbook of Medical Physiology 14th Edition
- Ganong's Review of Medical Physiology 25th Edition
- Sherwood, 9th edition.
- Silverthorn Physiology, 6th edition
- Vander's Human Physiology, 14th edition

Research:

<https://snipub.com/wp-content/uploads/2022/03/SNI-JBBS-22-02.pdf>

YouTube/videolink:

<https://www.youtube.com/watch?v=E0IBMWQDEH4>



Thank you!