

PART 1 | IMAGING IN CLINICAL PRACTICE

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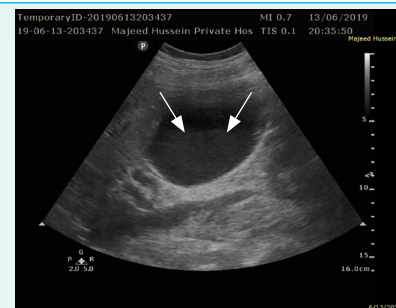
A 45 year-old female presented with Attacks of upper abdominal pain of few months duration, exacerbated by eating and associated with gaseous abdomen. No other significant symptoms. Her past medical, surgical and drug histories were unremarkable. Examination was completely normal. Abdominal ultrasound shown in this picture.

Q1: describe the ultrasonographic findings?

Q2: What is the diagnosis?

Q3: What is the causes of this condition?

Q4: What is the clinical course and the manifestations of this condition?



ANSWER OF Q1:

Ultrasound Cross sectional view through transabdominal subcostal approach. Showing distended gallbladder with fluid debris level containing a layer of hyperechoic material in the dependant portion of the gallbladder lumen without posterior acoustic shadow. Normal wall thickness with no evidence of gallstones seen.

ANSWER OF Q2:

Biliary sludge which is usually defined as a suspension of cholesterol monohydrate crystals or calcium bilirubinate granules and/or other calcium salts embedded in a mucous. Other commonly used terms are microlithiasis, microcrystalline disease, thick bile and bile sands.

ANSWER OF Q3:

Biliary sludge is uncommon in the asymptomatic, healthy persons. Sludge is found in 1.7 % of persons presented for routine medical examination of variable internal diseases and in 6.7 % of ultrasound examination performed for abdominal complaints.

Incidence of biliary sludge is 26-31% during pregnancy and it has shown that sludge disappeared in 61% of pregnant women after delivery. It is attributed to the effect of oestrogen and progesterone. Gallbladder sludge has been detected in 13-25% of individuals losing weight rapidly due to increased cholesterol secretion in bile.

A significant increase in the incidence of biliary sludge has also been shown in patients with prolonged fasting and in those receiving total parenteral nutrition. Messing reported a biliary sludge in 100% of patients receiving TPN for more than 6 weeks and disappeared 4 weeks after its withdrawal.

Some studies has shown that gallbladder sludge formed in 23-45% of patients receiving ceftriaxone treatment. Ceftriaxone calcium sands become insoluble salts after biliary saturation. Most reports indicates that after stopping the drug , sludge disappear in a matter of few days.^{10, 11}

ANSWER OF Q4:

Three possible outcomes for biliary sludge: spontaneous resolution, persistence (waxing and waning course), and evolution into gallstones. Removal of underlying cause lead to the disappearance of the sludge.

Janowitz has followed up biliary sludge for a mean of 20 months, he observed complete resolution of the sludge in 71% of cases, gallstones formation in 12.5% and 7.1% incidence of acute acalculous cholecystitis.

Moreover it has been shown that biliary sludge is found in 28-31% of patients with non-alcoholic pancreatitis and in up to 74% of patients with idiopathic pancreatitis, indicating that bile sludge could be associated with serious problems.

REFERENCES

1. Pazzi P, Gamberini S, Buldrini P, Gullini S. Biliary sludge: the sluggish gallbladder. *Dig Liver Dis.* 2003 Jul;35:39-45.
2. Kim YS, Kestell MF, Lee SP. Gall-bladder sludge: Lessons from ceftriaxone. *J Gastroenterol Hepatol.* 1992 Dec;7(6):618-21.
3. Jüngst C, Kullak-Ublick GA, Jüngst D. Microlithiasis and sludge. *Best Pract Res Clin Gastroenterol.* 2006 Jan;20(6):1053-62.

PART 2 | WHAT DO YOU KNOW ABOUT?

Helicobacter pylori Infection: when to test, when to treat

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Helicobacter Pylori is a common chronic infection of the stomach. In the presence of many types of diagnostic tests with variable sensitivity, specificity, cost and availability, it would be mandatory for any physician to know when and how you test for *H pylori* infection. This will enable us to give the proper treatment for the indicated person.



Choose the best appropriate answer for each statement:

1. *Helicobacter pylori*:

- (a) It is a gram positive rode.
- (b) Is the causative organism of a chronic infection of the stomach .
- (c) It is a rare disease in the developing countries.
- (d) It is a blood born transmitted infection.

2. Which is true about the features of *H. pylori*:

- (a) It is an acid resistant microorganism.
- (b) After entry to the body, it resides the distal part of the small bowel.
- (c) First infection gives a life-long immunity against recurrence.
- (d) It is easily killed outside human body.

3. The following are complications of *H. pylori* infection except:

- (a) Chronic dyspeptic symptoms.
- (b) Gastric ulcer.

(c) Iron deficiency anaemia.

(d) Exacerbation of asthma.

4. Which one of the following gastrointestinal conditions is an indication for testing for *H. pylori* infection:

- (a) Patients with peptic ulcer disease.
- (b) Patient known to have inflammatory bowel diseases.
- (c) Asymptomatic individuals with a family history of gastric cancer.
- (d) Gastro-oesophageal reflux disease.

5. Which one of the following extra gastric conditions does not need screening for *H. pylori* infection?

- (a) Patients with unexplained iron deficiency (ID) anaemia.
- (b) Concomitant long-term use of low dose aspirin.
- (c) Children with idiopathic thrombocyto-

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penic purpura (ITP).

- (d) Initiating chronic used of NSAIDs for any rheumatological conditions.

6. Serological tests for diagnosis of *H. pylori* infection:

- (a) It is a completely noninvasive test.
- (b) IgG level can differentiate the active from past infection.
- (c) Negative result can exclude the diagnosis of *H. pylori* infection .
- (d) It can be used for following up response to treatment.

7. For tests used in the diagnosis of *H. pylori* infections, which one is true:

- (a) Serological tests are the most accurate especially in following up response to treatment.
- (b) Antigen in stool is preferred in adult.
- (c) Due to their high accuracy, invasive methods are preferred for mass screening.
- (d) Urea breath test is currently recommended as the best approach for the screening of *H. pylori*.

8. Regarding treatment of *H. pylori* infection which statement is true:

- (a) First line therapy offers a cure rate of 100% in most cases.
- (b) Recent use of antibiotics has no effect on management of *H. pylori* infection.
- (c) *H. pylori* infection could be treated with a single antibiotic regimen.
- (d) Gastrointestinal side effects are common with *H. pylori* eradication therapy.

9. Regarding clarithromycin triple therapy regimen, which statement is true:

- (a) It includes 7 days course of clarithromycin, amoxicillin and a proton pump inhibitor (PPI).
- (b) It could not be used in those with penicillin allergy.

- (c) In those with previous macrolide exposure, clarithromycin triple therapy regimen still a first line option.

- (d) Higher eradication rates of *H. pylori* infection is reported with 14 days course.

10. Which statement about bismuth quadruple therapy is true:

- (a) It includes a 10-14 days of bismuth, metronidazole, tetracycline and PPI.
- (b) 10-14 days course of bismuth quadruple therapy is superior to a same duration course of clarithromycin triple therapy.
- (c) As in clarithromycin triple therapy, this course is affected by metronidazole resistance.
- (d) 10 days course have a mean eradication rate of 100%.

11. Regarding levofloxacin-based treatment, which statement is true:

- (a) Levofloxacin triple therapy includes a 10-14 days course of bismuth, amoxicillin and levofloxacin.
- (b) 10-14 days of levofloxacin triple therapy proved to be a comparable alternative to clarithromycin triple therapy of the same duration.
- (c) Levofloxacin sequential therapy is less efficacious than clarithromycin triple therapy.
- (d) Standard sequential therapy is more efficacious than levofloxacin sequential therapy.

12. Successful eradication of *H. pylori* is affected by:

- (a) Choice of the regimen.
- (b) Patient adherence to multi-drug regimen with frequent side effects.
- (c) Sensitivity of *H. pylori* strain to the antibiotic regimen.
- (d) All of the above.

Answers are on the next page

Helicobacter pylori Infection: when to test, when to treat

Answers of the Questions

1. The answer is b: *H. pylori* is a spiral shaped, micro-aerophilic, gram negative bacterium. It is the cause of chronic infection of the stomach affecting millions of persons worldwide, in developing and developed countries. Studies have reported that the prevalence of *H. pylori* infection varies from about 10 % to 90 %. This huge variation in the prevalence is attributed to differences in socioeconomic background of the studied sample, and the level of urbanization and sanitation conditions. Although it is not fully understood, evidence supports transmission via oral-oral or faecal-oral routes especially among family members.

Message: (*H. Pylori is a common chronic infection worldwide, transmitted via oral-oral or faecal-oral*)

2. The answer is a: *H. pylori* resists hard environmental conditions including the low acidity of the stomach, so it inhabits the corpus and the antrum of the stomach after entering the body of the host. It slowly grows on a culture media and can tolerate a hostile environment outside the human body; a feature which enable the microorganism to survive for periods of time outside the human host in faeces or in drinking water. Infection with *H. pylori* do not give a lifelong immunity against further infection in the future so reinfection is the cause of high prevalence in the communities.

Message: (*H. pylori is a slowly growing micro-organism, can resist hard surrounding conditions including the high acidity of the stomach.*)

3. The answer is d: Several gastro-duodenal complications are linked to *H. pylori* infection including gastritis, gastric ulcer, duodenal ulcer, chronic dyspeptic symptoms, gastric cancer, and gastric mucosa-associated lymphoid tissue (MALT) B-cell lymphoma. *H. pylori* in recent years has been reported

to cause several extra-gastric complications such as ischemic heart disease, neurodegenerative diseases, and haematologic disorders (iron deficiency anaemia, immunethrombocytopenic purpura in adults, and vitamin B12 deficiency), recently it has been found that *H. pylori* infection increases risk of cholecystitis and cholelithiasis, and in pregnant women, it increases the risk of preeclampsia and hyperemesis gravidarum. So far, exacerbation of asthma is not linked to *H. pylori* infection.

Message: (*H Pylori infection can cause many gastric and extra gastric complications; of importance are chronic dyspepsia, peptic ulcer diseases, and gastric cancer*)

4. The answer is a: Since all patients with a positive test for active infection with *H. pylori* should be offered treatment, the critical issue is which patients should be tested for the infection. The last American College of Gastroenterology (ACG) Clinical Guideline in 2017 recommends that All patients with active peptic ulcer disease (PUD), a past history of PUD (unless previous cure of *H. pylori* infection has been documented), low-grade gastric mucosa-associated lymphoid tissue (MALT) lymphoma, or a history of endoscopic resection of early gastric cancer (EGC) should be tested for *H. pylori* infection. See table 1 for other indications. Inflammatory bowel diseases, asymptomatic individuals with a family history of gastric cancer, or gastro-oesophageal reflux disease are not indication for testing for *H. Pylori*. See **table 1**

Message: (*Testing for H. pylori is not indicated for every person with gastrointestinal conditions*)

5. The answer is c: The ACG 2017 recommend testing for *H. pylori* infection in patients with unexplained iron deficiency anaemia. Adults but not children who have idiopathic thrombocytopenic purpura (ITP) should be screened for *H. pylori*. Concomitant long-

term use of low dose aspirin or initiating chronic use of NSAIDs (but not for those who are already using them) have shown to increase the risk of ulcer bleeding so it is advised to test for *H. pylori* infection. Many studies have found an association between *H. pylori* infection and Hyperemesis gravidarum, preeclampsia, and gall bladder diseases; however, evidence is lacking to support screening patients with these conditions for *H. pylori* infection. For other conditions that do not need testing for *H. pylori* see **table 2**.

Message: (Screening for *H. pylori* infection is needed for patient with Unexplained iron deficiency anaemia, adult with idiopathic thrombocytopenic purpura (ITP) and those on long term use of aspirin or NSAIDs)

6. The answer is c: Serological tests are relatively non-invasive but it needs a venesection to draw blood for testing. It depends on measuring immune response of the body to the *H. pylori*. Detecting IgG is a marker for exposure to the bacteria so it cannot differentiate between active and past infection. Serological tests have a very good negative predictive value i.e. negative results exclude to a good extent the diagnosis of *H. pylori* infection while positive results need to be proven by another methods like urea breath test, antigen in stool or biopsy. As any serological tests in medicine, they cannot be used to mark the response to treatment because they do not change to be negative in a very short time. Because of its availability and relatively simple cost, serological tests can be used as initial screening test which needs to be rechecked by other methods.

Message: (Serology used for screening to exclude *H. pylori* infection, positive results needs to be checked with antigen in stool, urea breath test, or biopsy)

7. Answer is d: Two groups of diagnostic tests are recommended for the diagnosis of *H. pylori* infection. The first is noninvasive; characterized as being less traumatizing for the patients, less expensive, more available, and needs less experience such as serological tests, antigen in stool urea breath test. The second group includes invasive test which are in general more traumatizing, more expensive, not easily available and need expert

Table 1: Conditions need a screen for *H. pylori* infection

1. All patients with active peptic ulcer disease (PUD),
2. A past history of PUD (unless previous cure of *H. pylori* infection has been documented),
3. Low-grade gastric mucosa-associated lymphoid tissue (MALT) lymphoma,
4. a history of endoscopic resection of early gastric cancer (EGC)
5. Uninvestigated dyspepsia who are under the age of 60 years and without alarm features
6. When upper endoscopy is undertaken in patients with dyspepsia
7. In patients taking long-term, low-dose aspirin
8. Patients initiating chronic treatment with a non-steroidal anti-inflammatory drug (NSAID), for those who are already using NSAID the evidence is not clear.
9. Patients with unexplained iron deficiency anaemia despite an appropriate evaluation (after endoscopy to exclude cancer of the colon and stomach)
10. Adults with idiopathic thrombocytopenic purpura (ITP)

Table 1: Conditions do not need a screen for *H. pylori* infection

1. Typical symptoms of gastro-oesophageal reflux disease (GERD) who do not have a history of peptic ulcer disease (PUD)
2. Asymptomatic individuals with a family history of gastric cancer
3. Patients with lymphocytic gastritis
4. Patient with hyperplastic gastric polyps
5. Pregnant women with hyperemesis gravidarum
6. Patients with myocardial infarction and stroke
7. Patients with Parkinson's disease
8. Inflammatory bowel disease
9. Urticaria
10. Type 1 diabetes
11. Allergic or atopic disorders
12. Celiac disease

persons such as rapid urease test, culture, and histological examination. Although serological tests are low cost and more available but they are less accurate, positive tests needs to be checked by other methods. Antigen in stool is preferred in children because it is very simple to have the sample from them despite its relative diagnostic limitations. Because of its invasiveness and cost, endoscopic diagnosis is not recommended for mass screening instead urea breath test is preferred for this purpose.

Message: (Serology is initial test but not accurate, so positive serological tests needs to be confirmed by other more accurate tests. Urea breath test is usually preferred diagnostic test.)

8. Answer is d: Nausea, dyspepsia, abdominal pain and diarrhoea are the most common adverse events associated with *H. pylori* eradication therapy. There is no treatment

regimen that guarantees a cure of *H. pylori* infection in 100% of patients, indeed there are currently few if any regimen which consistently achieve eradication rate exceeding 90%. Recent use of antibiotics for treatment of other condition is important as it may indicate the development of bacterial resistance and should be taken into consideration. A treatment regimen containing at least two antibiotics is required for treatment of *H. pylori* infection.

Message: (Recent use of antibiotic could affect the effectiveness of eradication therapy to *H. pylori*.)

9. **Answer is d:** Most studies have shown a higher eradication rate with treatment for 14 days versus 10 or 7 days. 7 days course regimen is no longer advisable as it is associated with treatment failure. Metronidazole could be used instead of penicillin in those people with penicillin allergy. The important thing in this regimen is the rate of clarithromycin resistance in the population and when it is below 15%, this regimen could be used as a first line option, and in people with no data on bacterial resistance, a prior use of macrolide especially for a long period should alert the physician to the possibility of resistance and use another treatment regimen.

Message: (the eradication regimen for *H. pylori* should include clarithromycin, amoxicillin or metronidazole in addition to PPI for 14 days)

10. **Answer is a:** A 10 day-course of bismuth quadruple therapy was founded to be superior to 7 days course of clarithromycin triple therapy, but there was no difference in the efficacy of the two regimens when given for 10-14 days. Metronidazole resistance has no impact on the efficacy of this regimen as it is not profound as in clarithromycin resistance. Most studies have shown a mean eradication rate of 91% with this regimen.

Message: (Bismuth quadruple therapy is as effective as clarithromycin based regimen if it is given for 14 days)

11. **Answer is b:** Levofloxacin is an antibiotic with activity against gram positive and gram negative bacteria including *H. pylori*, it is used in multiple regimens for *H. pylori* eradication including triple therapy of levofloxacin, amoxicillin and a proton pump inhibitor

(PPI), modified sequential therapy of 5-7 days amoxicillin and PPI followed by 5-7 days of PPI, levofloxacin and metronidazole and a quadruple therapy regimen of levofloxacin, omeprazole, nitazoxanide (alinia) and doxycycline (LOAD regimen). 10-14 days course of levofloxacin triple therapy had been shown to be as efficacious as clarithromycin triple therapy. Levofloxacin sequential therapy had been shown to be more efficacious than both standard sequential therapy (amoxicillin and PPI for 5 days then PPI, clarithromycin and metronidazole for additional 5 days) and 10-14 clarithromycin triple therapy.

Message: (2 weeks levofloxacin triple therapy has shown to be as effective as clarithromycin)

12. **Answer is d:** Determinants of successful *H. pylori* eradication can be divided into host and *H. pylori* related factors. Of the host factors, adherence was founded to be the most important predictor and it is affected by the number of medications in the regimen along with the severity of adverse events related to medication use, however patients are more likely to comply with the regimen if they are aware of the potential adverse events that might occur and understand which one require discontinuation of therapy. Also cigarette smoking and diabetes mellitus have been associated with treatment failure in several studies. Of the *H. pylori* related factors, antibiotic resistance has emerged as the single most important and consistent predictor of successful eradication and resistance to clarithromycin, metronidazole and levofloxacin limits the success of the common eradication regimens in use today.

Message: (successful eradication depends on type of regimen, sensitivity of *H. Pylori* and adhesion of patients)

REFERENCES

1. Chey WD, Leontiadis GI, Howden CW, and Moss SF. ACG Clinical Guideline: Treatment of Helicobacter pylori Infection. *Am J Gastroenterol* 2017; 112:212–238; doi: 10.1038/ajg.2016.563.
2. Public Health England. Test and treat for Helicobacter pylori (HP) in dyspepsia. Available on: <https://www.gov.uk/government/publications/helicobacter-pylori-diagnosis-and-treatment>. Accessed on 10 June 2019.
3. Johns Hopkins Medicine, Health. Helicobacter Pylori. Available at <https://www.hopkinsmedicine.org/health/conditions-and-diseases/helicobacter-pylori>. Accessed on 12 June 2019

PART 3 | Family Role in Health and Disease

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Family is the fundamental institution of organization in society. Families provide the environment where individuals are born, nurtured, learn to socialize and where an individual's behaviour and views take shape.¹ Because families have a powerful effect on individuals' wellbeing, research shows that a family-centered approach to health care may help curb rising health care costs.²

Researchers increasingly recognize families' important roles in influencing lifestyle factors and as gatekeepers to the health care system. From prevention to long-term care, families both influence and are influenced by the health of their individual members.²

The effects of family on health and disease are large and multifactorial. They are expressed across the individual and family life cycles. Family physicians and other health care providers must be cognizant of these influences and help individuals and families navigate the positive and less positive effects.³ The potential effects of family on health and illness include the following:

- Genetics and disease susceptibility, Prenatal and perinatal transmission of disease and Child rearing and nurturing.³
- Families can help promote health, prevent disease and reduce the risk of illness through high quality diet and life style.²
- Sociocultural traditions and economic influences including those that affect health are extended through families to individuals and impact health.¹
- Access to and quality of care as families influence health care and treatment deci-

sions and play key role in care, recovery and outcomes in acute and chronic illness and Spread of infectious disease.^{2,3}

- Families with acutely ill members are highly susceptible to stress.²

Family physicians encounter patients with a broad array of medical problems. The bio-psychosocial model encourages them to explore the impact of these problems on patients' abilities to function within daily spheres of life—family, friends, work, and school—to help them effectively.⁴ Many medical problems (e.g., substance abuse, sexual problems, chronic illness) naturally involve the family. It present an opportunity for family physicians to engage the patient's family more proactively.⁵

CLINICAL CASE PROBLEMS³

CLINICAL CASE PROBLEM (I):

A 32-year- man comes to your office for the first time requesting a health maintenance visit. He is married and the father of two young children. He works as an accountant. His firm has just offered a new health insurance plan, which pays for a preventive health maintenance examination. He wants to stay healthy and to live longer than both his parents.

SELECT THE BEST ANSWER TO THE FOLLOWING QUESTIONS

1. *Regarding his risk, you would ask him about which of the following?*
 - a) Diet history.
 - b) Exercise type and frequency.

- c) Smoking history.
- d) Family history.
- e) Alcohol intake.
- f) All of the above.

2. Which is true about family and risk?

- a) Family is one of the major influences on disease incidence and prevalence.
- b) Family risk outcomes are not modifiable.
- c) Family risk need not be ascertained because there is nothing you can do about it.
- d) Family disease susceptibility is absolutely transmittable.
- e) Family risk is not ascertainable by current methods of genetic screening.

CLINICAL CASE PROBLEM (II):

75-year-old patients are hospitalized after both had a stroke resulting in a left-sided hemiparesis. The size and location of the thrombotic events in these patients are almost identical, as is the initial degree of impairment. Treatment received is also the same. One patient lives alone and has a younger sibling living in a distant state. The other patient is part of an extended family with many social supports nearby, including grandchildren who visit her often while she is in the hospital.

3. What outcomes would you predict for these patients on the basis of their family social circumstances?

- a) Identical outcomes are likely given the identical lesions and initial impairments
- b) It is impossible to predict outcomes
- c) The patient with more family supports is likely to have a better outcome
- d) The patient with fewer family supports is at lesser risk of acute mortality
- e) Outcomes achieved are independent of any family social factors.

CLINICAL CASE PROBLEM (III):

A 28-year-old woman presents to your office for the first time for prenatal care. She is 14 weeks into her first pregnancy. She is human immunodeficiency virus (HIV) positive but stopped antiretroviral agents because she had heard that taking medication during pregnancy could harm the baby. She has a half-pack per day smoking habit that she has been unable to stop despite many attempts at quitting. She drinks at least a glass of wine with dinner each night. She works in sales at a local food bar. She asks you what she can do to give her child a better chance in life than she had.

4. At this time, it is most appropriate to advise her of which of the following?

- a) Perinatal transmission of the HIV virus poses the child's greatest risk.
- b) Smoking is by far the most hazardous factor in her prenatal history.
- c) Alcohol consumption during pregnancy is a major risk factor for fetal alcohol syndrome.
- d) She must restart antiretroviral medications immediately or risk certain death.
- e) None of the above.

CLINICAL CASE PROBLEM (IV):

A 25-year-old mother presents for the first time with her 2-week-old infant, her first child. Hovering in the background are the two grandmothers. The mother is visibly concerned that the baby is "only" at the same weight as he was at birth. One grandmother chimes in that she knew breastfeeding was a bad idea, and the other insists that it is time to introduce cereal to the baby's diet. They start arguing among themselves until you escort everyone but the mother and the infant from the examination room.

5. In addition to giving the mother accurate advice about breastfeeding and nutrition, which of the following is an appropriate intervention at this time?

- a) Refocus the attention of the grand-

- mothers to some other facet of the family experience.
- b) Establish and reinforce the competency of the mother in her breastfeeding.
 - c) Use your expert authority as the physician to set family rules for decision making in the mother's favor .
 - d) Acknowledge and reinforce the expert authority of the grandmothers.
 - e) A, B, and C are correct.

6. Possible positive aspects of the previous family situation include which of the following?

- a) Evidence of closeness and connectedness.
- b) A lack of criticism and blame.
- c) The absence of protectionism and ri-

gidity.

- d) All of the above.
- e) None of the above.

7. You handle the situation with skill and care, and the grandmothers leave feeling reassured of your careful attention to their first and only grandson, and they are impressed with his mother's newly identified and recognized competence. In future visits, anticipatory (preventive) guidance in this family should probably take into consideration which of the following?

- a) Family beliefs about child discipline.
- b) Family influences on exercise and diet.
- c) Family beliefs about health and illness.
- d) None of the above.
- e) A, B, and C.

CHOOSE THE MOST APPROPRIATE ANSWER:

ANSWERS CLINICAL CASE PROBLEM (I):

1. **The correct answer is f:** Family influences on health and disease are numerous and multifactorial. These influences can be expressed across individual and family life cycles. One of the most pronounced family effects is on genetic and disease susceptibility. Although all the historical elements listed are important, the family history, often recorded in the medical record pictorially as a genogram, will provide a constant guide for the assessment of symptoms as they are manifested across the individual life cycle.

2. **The correct answer is a:** Disease incidence and prevalence are directly related to the interplay of family genetics, behaviours, and the host environment. Physicians should attend to known cues of family historical factors that can often foreshadow overt disease in patients. Changes in diet, exercise, and smoking habits can modify outcomes for those with family risk factors.

ANSWERS CLINICAL CASE PROBLEM (II):

3. **The correct answer is c:** A large literature exists on the influence of family on survival and disease progression. Strong family supports are protective and promote healing in acute disease circumstances. Studies of disease outcomes in myocardial infarction and stroke reveal striking supportive effects of family supports even when other variables are controlled for

ANSWERS CLINICAL CASE PROBLEM (III):

4. **The correct answer is a:** Family influence on prenatal and perinatal disease transmission is another important influence of the family on health and disease. Pregnant women with HIV can reduce the risk of transmitting HIV to their babies to less than 1% if they take antiretroviral drugs during pregnancy. This mother can help her child's future most by resuming her antiretroviral therapy.

ANSWERS CLINICAL CASE PROBLEM (IV):

5. *The correct answer is e:* How many of us have been confronted by the case illustrated? Most experienced family physicians will recognize the situation. Dealing with family members beyond the presumed present patient is a common occurrence in family medicine. In fact, skillful use of family resources is a therapeutic advantage in the family physician's practice if it is done carefully. The supportive closeness of this family must be counterbalanced by the reinforcement of the competence of the mother in this scenario. Although being careful not to isolate the grandmothers is important, the mother's competence and her decision-making authority must ultimately be reinforced. Because the physician possesses all forms of social power (expert, legal, force, referent, and reward), this can readily be accomplished.

6. *The correct answer is a:* Although answers b and c can be positive aspects of family, they are absent in this situation.

7. *The correct answer is e:* Understanding of family influences on health and disease is essential for effective practice as a family physician. Understanding allows not only appropriate interventions in acute disease but also anticipatory guidance in the prevention of morbidity and future illness, and the promotion of health and well-being. Family factors that have protective influence on health and illness include closeness and connectedness; well-developed problem-focused coping skills; clear organization and decision making; and direct communication.

REFERENCES

1. WHO. Family as Centre of Health Development Report of the Regional Meeting Bangkok, Thailand , 18–20 March 2013. Available at: <https://apps.who.int/iris/handle/10665/205062>. Access date 5-2019.
2. University of Wisconsin-Madison/Extension. FAMILY MATTERS: A Family Perspective in Health Care. A Family Impact Seminar Newsletter for Wisconsin Policymakers, 2002;2(3). Available at: http://wisfamilyimpact.org/wp-content/uploads/2014/10/pnl_v02i03_1102.pdf. Access date 5-2019.
3. Tallia A. Scherger J. Dickey N. Family Influences on Health and Disease. In: Swanson's Family Medicine Review 8th Edition, 2016. Elsevier. P.1.
4. NEWMAN AC. LAWLESS JJ. GELO F. Family-Oriented Patient Care. *Am Fam. Physician*. 2007 May 1; 75(9):1306-1310. Available at: <https://www.aafp.org/afp/2007/0501/p1306.html>.
5. Botelho RJ, Lue BH, Fiscella K. Family involvement in routine health care: a survey of patients' behaviours and preferences. *J Fam Pract*. 1996;42:572–6.