

## Clinical Pathways for the Management of Dyspepsia in Family and Community Practice

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**Background:** Dyspepsia is any chronic or recurrent discomfort in the epigastric area described as bloatedness, fullness, gnawing or burning continuously or intermittently for at least 2 weeks. About 40% of the adult population may suffer from dyspeptic symptoms but most of them are un-investigated because only about 2% consult their physician.

**Method:** The general objective of this clinical pathway is to improve outcomes of patients with dyspepsia in family and community practice.

**Method:** The PAFP Clinical Pathways Group reviewed the previous Clinical Practice Guideline for the Treatment of Dyspepsia in Family Practice, a local guideline developed by the Family Medicine Research Group and adopted as policy statement by the Philippine Health Insurance Corporation. The reviewers then developed a time-related representation of recommendations on patient care processes, in terms of history and physical examination, laboratory tests, pharmacologic and non-pharmacologic interventions as well as social and community strategies to treat hypertension and prevent complications.

**Recommendation:** All patients with upper gastrointestinal pain or discomfort should have a detailed history focusing on weight loss, hematemesis, hematochezia, melena, dysphagia, odynophagia, vomiting, NSAID intake, alcohol intake, smoking, frequent medical complaints, depression, anxiety, personal or family history of gastrointestinal disease using family genogram. Physical examination findings provide minimal information but should be done to rule out an organic pathology and to look for alarm clinical features like anemia, abdominal tenderness or mass, jaundice, melena etc. If the patient is with history of previous dyspepsia treatment, more than 45 years old or long-term use of NSAID, the physician may request for non-invasive H. pylori test. Upper abdominal ultrasound, liver function test, pancreatic amylase may be done if organic problem is considered. Start therapeutic trial of prokinetic treatment for 1-2 weeks or proton-pump inhibitor depending on the symptoms. Fixed drug combination may be used if symptoms are undifferentiated. The patient should be educated about upper gastrointestinal disorders and dyspepsia, risk factors and complications. If medications were prescribed, explain the dose, frequency, intended effect, possible side effects and importance of medication adherence. Lifestyle modifications focusing on low fat meals, weight reduction, avoidance of alcohol intake and smoking cessation, eating way before bedtime, elevated head while sleeping, etc. may also be done. Recommendations were also made on subsequent visits.

**Implementation:**

Quality improvement strategy is recommended for implementation of this pathway. This will involve pre- and post-intervention data collection using records review. Intervention strategies may be feedback, group consensus or incentive mechanisms.

## INTRODUCTION

Our previous guideline in family medicine, defined dyspepsia as any chronic or recurrent discomfort in the epigastric area described as bloatedness, fullness, gnawing or burning continuously or intermittently for at least 2 weeks. Concomitant symptoms like anorexia, early satiety, belching, nausea, regurgitation or vomiting may also be present.<sup>1</sup> This is a very common symptom complaint in family and community medicine practice.

About 40% of the adult population may suffer from dyspeptic symptoms but most of them are un-investigated because only about 2% consult their physician. Based on systematic reviews, the pooled prevalence of un-investigated dyspepsia was 21% (95% confidence interval, 18% to 24%). The risk is higher among females and those with *Helicobacter pylori* (*H. pylori*) infection, smokers, and non-steroidal anti-inflammatory drug users.<sup>2</sup> Even after endoscopy, more than 75% with dyspepsia don't have obvious structural abnormality. Among those with abnormality, the most common findings are esophagitis (13%) and peptic ulcer (8%).<sup>3</sup> There is high direct and indirect costs due to dyspepsia because of its prevalent, recurrent and chronic condition. Fortunately there is no mortality associated with dyspepsia symptoms.<sup>4</sup>

Several treatment guidelines have been developed for the management of dyspepsia. The American and European multidisciplinary working group as well as a local Family Medicine Research Group, Inc. have also developed clinical practice guideline for the management of dyspepsia in Philippine family and community medicine practice.<sup>1,5,6</sup> The main recommendations were basically similar in terms of indication for prompt endoscopy, the application of diagnostic tests and treatment of recurrent symptoms. In summary the recommendations were: 1) patients with alarm symptoms should undergo prompt endoscopy, 2) those without alarm symptoms non-invasive testing for *H. pylori* is recommended, 3) empiric trial of acid suppression with a proton pump inhibitor is recommended if *H. pylori* testing is not feasible, 5) prokinetics are not currently recommended as first-line therapy for un-investigated dyspepsia, 6) test-

and-treat is preferable in patients with moderate to high prevalence of *H. pylori* infection (specialist practice) and empiric proton pump inhibitor low prevalence situations (family and community practice), 7) if empiric treatment with proton pump inhibitor fails, consider changing or adding another drug class or increase dose, 8) If the patient still fails to respond testing for *H. pylori* and endoscopy may be considered, and 9) If there is improvement in symptoms patients may be treated on either on demand or intermittent basis.<sup>5,6</sup>

The general objective of this clinical pathway is to improve outcomes of patients with dyspepsia in family and community practice. It hopes to achieve this by:

- o Promoting a standardized management of patients with dyspepsia
- o Promoting quality improvement initiatives at the clinic and organizational level

## Methods of Development and Implementation

The PAFP Clinical Pathways Group reviewed the previous Clinical Practice Guideline for the Treatment of Dyspepsia in Family Practice, a local guideline developed by the Family Medicine Research Group and adopted as policy statement by the Philippine Health Insurance Corporation. The group also reviewed published medical literature to identify, summarize, and operationalize the clinical content of diagnostics, interventions and clinical indicators or outcomes to develop an evidence-based clinical pathway in family medicine practice. The reviewers then developed a time-related representation of recommendations on patient care processes, in terms of history and physical examination, laboratory tests, pharmacologic and non-pharmacologic interventions as well as social and community strategies to treat hypertension and prevent complications.

The group adopted several strategies in developing the recommendations. The first strategy is emphasizing on evidence-based recommendations as recommended assessments and interventions. The second strategy is recognition of potential variations between-patient and

between specific practice settings. The third strategy is the recognition of “stakeholder groups” outside of family and community practice with careful attention to getting their opinion and support but without sacrificing the objectives of the project. The fourth strategy is emphasis on the commitment to establishment of the ultimate goal of improving the effectiveness, efficiency and quality of patient care in family and community practice.

The evidences for the patient care processes were reviewed and summarized as notes on the recommendations. The clinical pathway was then disseminated to selected PAFP chapters and members and other stakeholders for consensus development. Dissemination was publication in the Filipino Family Physician journal, conference presentations and focused group discussions.

The implementation of clinical pathways to be adopted by the PAFP will be quality improvement activities in a form of patient record reviews, audit and feedback. Audit standards will be the assessment and intervention recommendations in the clinical pathway. Implementation of clinical pathways will be at the practice level and the organizational level. Practice level can be a simple count of family and community medicine practitioners using and applying the clinical pathways. Organizational outcomes can be activities of the PAFP devoted to the promotion, development, dissemination and implementation of clinical pathways.

### Grading of the Recommendations

The PAFP QA Committee met as a panel and graded the recommendations as shown in Table 1. The grading system was a mix of the strength of the reviewed published evidence and the consensus of a panel of experts. In some cases the published evidence may not be applicable if Philippine family practice setting, so a panel grade based on the consensus of clinical experts was also used. Thus if the recommendation was based on a published evidence that is a well done randomized controlled trial and the panel of expert voted unanimously for the recommendation, it was given a grade of A-I. If the level of evidence is based

on an observational study but the panel still unanimously considered the recommendation, the grade given was A-II and if the level of evidence is just an opinion but the panel still unanimously recommended it, the grade was A-III.

**Table 1.** Grading of the recommendations.

Panel Grade Level	Evidence Grade Level		
	1	2	3
A	A-I	A-II	A-III
B	B-I	B-II	B-III
C	C-I	C-II	C-III

#### *Panel Grade Levels*

- A - All the panel members agree that the recommendation should be adopted because it is relevant, applicable and will benefit many patients.
- B - Majority of the panel members agree that the recommendation should be adopted because it is relevant, applicable in many areas and will benefit many patients.
- C - Panel members were divided that the recommendation should be adopted and is not sure if it will be applicable in many areas or will benefit many patients.

#### *Evidence Grade Levels*

- I - The best evidence cited to support the recommendation is a well-conducted randomized controlled trial. The CONSORT standard may be used to evaluate a well-conducted randomized controlled trial.
- II - The best evidence cited to support the recommendation is a well-conducted observational study i.e. match control or before and after clinical trial, cohort studies, case control studies and cross-sectional studies. The

STROBE statement may be used to evaluate a well-conducted observational study.

III - The best evidence cited to support the recommendation is based on expert opinion or observational study that did not meet the criteria for level 2.

In the implementation of the clinical pathways, the PAFP QA committee strongly recommends compliance to guideline recommendations that are graded as either A-I, A-II or B-I. However, the committee also recommends using sound clinical judgment and patient involvement in the decision making before applying the recommendations.

Pathway Recommendations

Visit	Pathway Tasks				Patient Outcomes
	History and Physical Examination	Laboratory	Pharmacologic Intervention	Non-pharmacologic Interventions	
First Visit	<p>___ All patients with upper gastrointestinal pain or discomfort should have a detailed history focusing on weight loss, hematemesis, hematochezia, melena, dysphagia, odynophagia, vomiting, NSAID intake, alcohol intake, smoking, frequent medical complaints, depression, anxiety, personal or family history of gastrointestinal disease using family genogram. (A-II)</p> <p>___ Physical examination findings provide minimal information but should be done to rule out an organic pathology and to look for alarm clinical features like anemia, abdominal tenderness or mass, jaundice, melena etc. (A-II)</p> <p><b>Pathway decisions</b></p> <p>___ If there is organic/structural problem based on significant physical examination finding, refer to specific clinical pathway (A-III)</p> <p>___ Probably motility problem if prominent history of bloatedness, dysphagia and vomiting (A-III)</p> <p>___ Probable acid-related problem if prominent history of epigastric pain, NSAID and alcohol intake and reflux symptoms (A-III)</p> <p>___ Undifferentiated upper gastrointestinal problem (A-III)</p>	<p>___ Request for non-invasive H. pylori test if with history of previous dyspepsia treatment, more than 45 years old or long-term use of NSAID (A-II)</p> <p>___ Upper abdominal ultrasound, liver function test, pancreatic amylase if organic problem is considered (A-II)</p>	<p><b>Probably motility problem</b></p> <p>___ Start therapeutic trial of prokinetic treatment for 1-2 weeks (A-I)</p> <p><b>Probably acid-related problem</b></p> <p>___ Start therapeutic trial with proton-pump inhibitor or H2 blocker for 1-2 weeks (A-I)</p> <p><b>Undifferentiated upper gastrointestinal problem</b></p> <p>___ Start therapeutic trial with combination of prokinetic and proton-pump inhibitor or H2 blocker for 1-2 weeks (A-I)</p>	<p><b>Patient interventions</b></p> <p>___ Educate the patient about upper gastrointestinal disorders and dyspepsia, risk factors and complications (A-II)</p> <p>___ If medications were prescribed, explain the dose, frequency, intended effect, possible side effects and importance of medication adherence (A-II)</p> <p>___ Lifestyle modifications focusing on low fat meals, weight reduction, avoidance of alcohol intake and smoking cessation, eating way before bedtime, elevated head while sleeping, etc. (A-II)</p> <p><b>Family interventions</b></p> <p>___ Inquire and recommend family members' lifestyle activities (A-III)</p> <p><b>Community interventions</b></p> <p>___ Inquire for community lifestyle activities (A-III)</p> <p><b>Continuing Care</b></p> <p>___ Follow-up after 1-2 weeks</p> <p>___ Offer family wellness package (A-III)</p>	<p>___ Aware of initial diagnosis (A-III)</p> <p>___ Aware of risk factors and complications (A-III)</p> <p>___ Aware of importance of adherence to diagnostics and interventions (A-III)</p>
Variations					

Visit	Pathway Tasks				Patient Outcomes
	History and Physical Examination	Laboratory	Pharmacologic Intervention	Non-pharmacologic Interventions	
Second Visit	<p>___ Review and note any change in history focusing on weight loss, hematemesis, melena, dysphagia, odynophagia, vomiting, NSAID intake, alcohol intake, smoking frequent medical complaints, depression, anxiety, personal or family history of gastrointestinal disease using family genogram. (A-II)</p> <p>___ Repeat and note any change in physical examination focusing on the upper gastrointestinal tract (A-II)</p> <p>___ Review the results of laboratory tests and response to empiric treatment (A-II)</p> <p><b>Pathway decisions</b></p> <p>___ If there is symptom improvement with the therapeutic trial, continue until 4 weeks (A-III)</p> <p>___ If no symptom improvement, refer for gastrointestinal endoscopy (A-III)</p> <p>___ If the H pylori test is positive, start eradication treatment (A-III)</p> <p>___ If ultrasound and other laboratory tests are positive manage accordingly (A-III)</p>	<p>___ Request for endoscopy if symptoms did not improve with therapeutic trial for 2-4 weeks (A-II)</p> <p>___ Complete request for upper abdominal ultrasound, liver function test and pancreatic amylase if organic problem is considered (A-II)</p>	<p><b>Improved symptoms</b></p> <p>___ Continue medications until 4 weeks (A-I)</p> <p><b>With upper gastrointestinal organic problem</b></p> <p>___ Refer to gastroenterologist or manage according to available clinical pathway (A-III)</p>	<p><b>Patient interventions</b></p> <p>___ Enhance education about upper gastrointestinal disorders and dyspepsia, risk factors and complications (A-II)</p> <p>___ If medications were prescribed, enhance explanation on the dose, frequency, intended effect, possible side effects and importance of medication adherence (A-II)</p> <p>___ Enhance lifestyle modifications focusing on low fat meals, weight reduction, avoidance of alcohol intake and smoking cessation, eating way before bedtime, elevated head while sleeping, etc. (A-II)</p> <p><b>Family interventions</b></p> <p>___ Enhance recommendation for family members' appropriate lifestyle activities (A-III)</p> <p><b>Community interventions</b></p> <p>___ Recommend participation in appropriate community lifestyle activities like alcohol anonymous (A-III)</p> <p><b>Continuing care</b></p> <p>___ Follow-up after 1 month until upper gastrointestinal symptom is resolved and every 3-6 months if BP target is already achieved (A-III)</p>	<p>___ Improved symptom control (A-I)</p> <p>___ Modification of risk factors i.e. diet, lifestyle, smoking and alcohol intake (A-I)</p> <p>___ Absence of new complications (A-III)</p> <p>___ Adherence to diagnostics and interventions (A-II)</p> <p>___ Agreed plan for family intervention (A-III)</p>
Variations					

Visit	Pathway Tasks				Patient Outcomes
	History and Physical Examination	Laboratory	Pharmacologic Intervention	Non-pharmacologic Interventions	
Continuing Visit	<p>___ Review and note any change in history focusing on weight loss, hematemesis, melena, dysphagia, odynophagia, vomiting, NSAID intake, alcohol intake, smoking frequent medical complaints, depression, anxiety, personal or family history of gastrointestinal disease using family genogram. (A-II)</p> <p>___ Repeat and note any change in physical examination focusing on the upper gastrointestinal tract (A-II)</p> <p>___ Review the results of endoscopy and other laboratory tests (A-II)</p> <p><b>Pathway decisions</b></p> <p>___ If endoscopy was positive for bleeding peptic ulcer and other serious organic problem consider transfer of care to gastroenterologist (A-III)</p> <p>___ If there is continued positive response to therapeutic trial and H. pylori eradication continue with current care (A-III)</p>	<p>___ Repeat request H pylori test, endoscopy or upper abdominal ultrasound, liver function test and pancreatic amylase if organic problem was considered after 3-6 months to monitor response to treatment (A-II)</p>	<p><b>Improved symptoms</b></p> <p>___ Self-management with the same medications for symptom recurrence (A-I)</p> <p><b>With upper gastrointestinal organic problem</b></p> <p>___ Refer to gastroenterologist or manage according to available clinical pathway (A-III)</p>	<p><b>Patient interventions</b></p> <p>___ Enhance education about upper gastrointestinal disorders and dyspepsia, risk factors and complications (A-II)</p> <p>___ Educate the patient on self-management for symptom recurrence (A-II)</p> <p>___ Enhance lifestyle modifications focusing on low fat meals, weight reduction, avoidance of alcohol intake and smoking cessation, eating way before bedtime, elevated head while sleeping, etc. (A-II)</p> <p><b>Family interventions</b></p> <p>___ Enhance recommendation for family members' appropriate lifestyle activities (A-III)</p> <p><b>Community interventions</b></p> <p>___ Recommend participation in appropriate community lifestyle activities like alcohol anonymous (A-III)</p> <p><b>Continuing care</b></p> <p>___ Follow-up after 1 month until upper gastrointestinal symptom is resolved and every 6-12 months (A-III)</p>	<p>___ Improved symptom control (A-I)</p> <p>___ Modification of risk factors i.e. diet, lifestyle, smoking and alcohol intake (A-I)</p> <p>___ Absence of new complications (A-III)</p> <p>___ Adherence to diagnostics and interventions (A-II)</p> <p>___ Implemented plan for family and community intervention (A-III)</p>
Variations					

## Notes on the Recommendations

Guidelines and clinical pathways are important tools in family and community practice. These are usually based on published evidence. But when evidence is limited, guidelines have to rely on the opinions and experience of physicians and arrive at a consensus.<sup>7</sup> This pathway contains specific recommendations for decisions to be made during the first, second and continuing visits that are based on published clinical evidence as well as consensus.

### First Visit

#### *History and Physical Examination*

Patients with dyspepsia will be consulting a physician's clinic for the following symptoms; recurrent epigastric pain, heartburn or acid regurgitation, with or without bloating, nausea or vomiting. These symptoms fit in the definition of dyspepsia adopted by the National Institute of Health Care and Clinical Excellence (NICE) in the United Kingdom.<sup>8</sup>

The clinical history and physical examination must focus on investigating for the presence of age at onset greater than 45 years old, weight loss, anemia, hematemesis, melena, hematochezia, dysphagia, odynophagia, persistent vomiting, abdominal mass, jaundice, chronic NSAID intake, chronic alcohol intake and previous history of ulcer. These were considered alarm features in previous guidelines and may signify that the patient may be at high risk. Other features like frequent medical complaints, depression, anxiety, family history of dyspepsia or peptic ulcer disease and smoking should also be obtained.<sup>1</sup> It is also recommended to review medications for possible causes of dyspepsia for example, calcium antagonists, nitrates, theophylline, bisphosphonates, corticosteroids and nonsteroidal anti-inflammatory drugs (NSAIDs).<sup>8</sup> Gastrointestinal complaints are common among patients with somatization and anxiety disorders. A cohort study showed that certain personality characteristics like trait anger reactivity and stress proneness, frequent use of coping strategies and social stress predispose individuals

to develop functional gastrointestinal disease including dyspepsia. It was noted that patients with functional gastrointestinal disease had more stressors (98% vs 36% compared to normal healthy controls) and that the greater the number of stressors is also associated with greater severity of the disease.<sup>9</sup>

Physical examination rarely helps in establishing the etiology of dyspepsia. The usual PE for patients with dyspepsia will usually show no masses, no organomegaly and variable epigastric tenderness.<sup>10,11</sup>

After conducting a history and physical examination, the patient's dyspepsia may be classified into the following symptom syndrome that may guide initial choice of diagnostic and therapeutic management.

- Dysmotility like dyspepsia - Agreus and Talley both described this subgroup by naming the following most bothersome symptoms: Upper abdominal discomfort (not pain); early satiety, bloating in upper abdomen, post-prandial fullness, and nausea, retching or vomiting.<sup>12</sup>
- Ulcer-like dyspepsia – Barbara's article succinctly described the symptoms as suggestive of peptic ulcer diseases. Talley and Agreus agreed on the following symptomatology: relapsing epigastric pain, aggravated by hunger and relieved by antacids.<sup>12</sup>
- Reflux-like dyspepsia – Talley and Agreus described the most bothersome symptom as heartburn and acid regurgitation which may awaken patient at night.<sup>12</sup>
- Functional dyspepsia – Barbara briefly described this subgroup as patients who report dyspeptic symptoms in whom no disease can be identified by any clinical, biochemical, endoscopic, ultrasonographic pathology. The diagnosis is usually made after an extensive gastrointestinal diagnostic work-up.<sup>13</sup>

Aside from the four symptom syndromes mentioned, family and community medicine practitioners may also

limit the diagnosis to just two types i.e. post-prandial dysmotility syndrome (motility-related dyspepsia) or epigastric pain syndrome (acid-related dyspepsia). This has around 70% pre-test probability as a provisional diagnosis after a thorough history and physical examination. Although overlapping symptoms may be present, these two syndromes separate out more clearly and can guide the initial diagnostic and therapeutic decisions.<sup>14</sup> The possibility of cardiac or biliary disease should also be part of the differential diagnosis.<sup>8</sup> Some authors make mention of those chronically abusing alcohol being at a higher risk for developing conditions such as chronic pancreatitis which may present as dyspepsia.

After making a provisional diagnosis, the family and community physician has two main options. The first option is empiric medical therapy based the dominant symptom or symptom complex i.e. motility-related dyspepsia and acid-related dyspepsia with further investigation reserved for 'empiric treatment failures' for low risk patients (no alarm features). The previous guideline on dyspepsia recommended that the presence of alarm symptoms physician should warrant prompt referral. However, there is little evidence in the literature of the exact predictive value of these alarm features in the diagnosis of cancer or other serious diseases causing dyspepsia.<sup>15</sup> Acid-related and gastroesophageal reflux disease (GERD) can be diagnosed clinically if the patient's dominant symptoms are heartburn or acid regurgitation, or both. Individuals who reflux gastric contents into the esophagus may cause symptoms sufficient to reduce quality of life. They may be treated empirically with proton pump inhibitors or H2 blockers without further investigation provided there are no alarm features.<sup>16</sup> Dysmotility-related dyspepsia may be treated with prokinetic drugs. There are available fixed dose combination of acid suppression and dysmotility drugs or acid suppression and anti-H pylori drugs that family physicians can also use for empiric treatment.

The second option is immediate referral for diagnostic evaluation like endoscopy for high risk patients.<sup>17</sup> Alarm features like melena, hematochezia, anemia and

significant weight loss are listed because intuitively they are indicators of the presence of either a malignancy or a peptic ulcer disease that may warrant prompt endoscopy and referral.<sup>8</sup> The decision of prompt referral may depend on the clinical judgment of the family physician, the availability of the specialist facility and a shared decision with the patient.

#### *Laboratory Tests*

Most patients with dyspepsia may undergo empiric treatment for 2-4 weeks. However, a "test and treat" strategy for *Helicobacter pylori* (H pylori) may be done among uninvestigated dyspepsia in people over 45 years of age or long-term non-steroidal anti-inflammatory drug treatment.<sup>8,18,19</sup> There may be a need for a 1-week washout period after proton pump inhibitor (PPI) use before testing for H pylori. The urea breath and fecal antigen tests are acceptable for diagnosis of H. pylori but is not yet readily available in family and community practice in the Philippines.

Ultrasonography is a non-invasive and readily available diagnostic procedure in most parts of the country. Ultrasonography shows 100% sensitivity and 87.5% specificity compared to ambulatory gastro-oesophageal reflux disease diagnosis. It can estimate whole gastric volume, antral area or diameters, and transpyloric flow in fasting state and in response to test meal. Gallbladder, liver and pancreas ultrasonography is reliable to determine structural problems in these organs. All these make ultrasound an appealing diagnostic test to assess upper gastrointestinal disease.<sup>20</sup>

A special group of patients may also need psychiatric testing especially if the physician suspects that the dyspeptic patient has some underlying psychological disturbance. Drossman recommended psychiatric testing if there are: 1) complains of chronic pain, 2) longer pain history, 3) abnormal illness behavior - relentless search to validate the disease, 4) family dysfunction, 5) disorder affects QOL and daily function, 6) history of psychiatric diagnosis, and 7) poor coping strategies.<sup>21</sup>

### *Pharmacologic Interventions*

Before starting empiric treatment, the family and community physician must first ensure the following: 1) the symptoms originate in the upper gastrointestinal tract and cardiac, biliary or pancreatic problem was clinically ruled out, 2) alarm features associated with bleeding peptic ulcer or cancer are absent, 3) discontinued use of non-steroidal anti-inflammatory drugs, and 5) *H. pylori* infection is not highly considered. The family physician must discuss with patients over 45 years of age who present with dyspepsia and alarm features associated with bleeding peptic ulcer or cancer to get prompt investigation, preferably endoscopy.

Patients who use NSAIDs regularly are recommended to stop NSAID. If NSAID therapy cannot be stopped, prophylactic therapy or enteric coated NSAID may be tried. Non-steroidal anti-inflammatory drugs, acetylsalicylic acid and cyclooxygenase-2-selective inhibitors can all cause dyspepsia. Combination therapy with either a proton pump inhibitor or high-dose H2RA is recommended.<sup>22</sup> If practically feasible, patients who had history of chronic dyspepsia, NSAID use but without alarm symptoms warranting endoscopy should be tested for *H. pylori* infection, and those with a positive result should be treated with *H. pylori*-eradication therapy. Those with a negative result should have their symptoms treated with optimal anti-secretory therapy or a prokinetic agent or a combination of both.<sup>21</sup>

Most patients with dyspepsia may be offered acceptable symptomatic management. As there is no single ideal first choice drug, selection is often empiric after considering the following: level of contact and care, dominant dyspepsia symptom, availability and cost of medicines, individual preferences. Most guidelines recommend empirical full-dose PPI therapy for 2-4 weeks to people with dyspepsia.<sup>8</sup> H2-receptor antagonists and prokinetic agents may be considered as second-line or alternative empiric medication.<sup>24,25,26</sup> Drug treatment should continue for a finite period (2-4 weeks) and response should be monitored. All patients should be given advice on lifestyle changes.<sup>17</sup>

For frequent or severe GERD symptoms, proton pump inhibitors for 2-4 weeks are recommended for GERD. Over-

the-counter antacids or H2 blockers may be effective for some patients with mild or infrequent symptoms. Routine testing for *Helicobacter pylori* infection is unnecessary before starting treatment. Endoscopic screening for Barrett's epithelium may be considered in adults with GERD for more than 10 years.<sup>27</sup>

### *Non-pharmacologic Interventions*

Once a patient is diagnosed with dyspepsia, the family and community physician should carefully explain the pathophysiology and benign nature of this condition. To avoid anxiety and further cost of diagnosis and treatment, the patient must be re-assured about the disease. Recurrence is common and self-management is essential for adequate control of symptoms. The physician must establish a good doctor-patient relationship.<sup>28</sup>

The following points must be emphasized. Offer simple lifestyle advice, including advice on healthy eating, weight reduction and smoking cessation. Advise people to avoid known precipitants they associate with their dyspepsia where possible. These include smoking, alcohol, coffee, chocolate, fatty foods and being overweight. Raising the head of the bed and having a main meal well before going to bed may help some people. Provide people with access to educational materials to support the care they receive. Recognize that psychological therapies, such as cognitive behavioural therapy and psychotherapy, may reduce dyspeptic symptoms in the short term in individual people.<sup>8</sup>

### *Patient Outcomes*

At the end of the consultation, the patient must be aware of the diagnosis of dyspepsia and its recurrent nature. The patient must also be aware of the potential complications and differential diagnosis. The patient must agree to follow the recommended lifestyle changes. If the patient was given empiric treatment, the patient must also be aware of its dose, frequency of intake, expected effect and potential side effects. A baseline symptom score or quality of life score should also be obtained as baseline.

## Second Visit

### *History and Physical Examination*

Evaluate the patient's response to empiric treatment. If laboratory evaluation was requested, evaluate the results. Review the history and physical examination and correlate with results of laboratory and response to empiric treatment. Consider referral to a specialist service for patients of any age with gastro-oesophageal symptoms that are non-responsive to treatment.<sup>8</sup>

### *Laboratory Tests*

If empiric treatment or after a trial of a second drug fails, then further investigation should be considered. Upper gastrointestinal endoscopy and H pylori testing are valuable diagnostic tools that can guide future clinical decisions. The need for endoscopy is a difficult decision in patients with dyspepsia. It is costly and not readily available in family and community practice. However early endoscopy will often prove more cost effective than delaying until the indications are clearer.<sup>29</sup>

H. pylori testing is another test to be considered. There is now direct clinical evidence supporting a test-and-treat approach in patients with dyspepsia symptoms.<sup>22</sup> Empiric H. pylori eradication therapy is not recommended.

The role of H. pylori is an important development in gastroduodenal disease. It has changed our understanding of the pathophysiology of diseases in the in the upper gastrointestinal tract. It may also have a role in un-investigated and functional dyspepsia and ulcer risk in patients taking low-dose aspirin or starting therapy with a non-steroidal anti-inflammatory medication.<sup>30</sup> Eradication of the bacterium resulted to faster cure of peptic ulcer disease and decreased the symptoms of non-ulcer dyspepsia.<sup>31</sup> H. pylori infection can be accurately diagnosed with urea breath test or a stool antigen test. It can also be diagnosed invasively by histology or culture.<sup>32</sup> Proton pump inhibitor therapy should be stopped at least 1 week prior to H pylori testing.<sup>33</sup>

## *Pharmacologic Interventions*

If the initial empiric treatment fails a trial of an additional second drug may be done. H2 blocker therapy if there is an inadequate response to a PPI may be added.<sup>8</sup> Cure of H. pylori infection decreases recurrence rates and facilitates healing. Thus antibiotic therapy is indicated for all H. pylori-infected patients. No optimal, simple antibiotic regimen has yet emerged.

While choosing a treatment regimen for H. pylori, patients should be asked about previous antibiotic exposure and this information should be incorporated into the decision-making process. For first-line treatment, clarithromycin triple therapy should be confined to patients with no previous history of macrolide exposure who reside in areas where clarithromycin resistance amongst H. pylori isolates is known to be low. Most patients will be better served by first-line treatment with bismuth quadruple therapy or concomitant therapy consisting of a PPI, clarithromycin, amoxicillin, and metronidazole.<sup>30</sup>

The Asia-Pacific Consensus Conference recommended H. pylori eradication among infected patients with functional dyspepsia and those receiving long-term maintenance proton pump inhibitor for gastroesophageal reflux disease. In Asia, the currently recommended first-line therapy for H. pylori infection is PPI-based triple therapy with amoxicillin/metronidazole and clarithromycin for 7 days, while bismuth-based quadruple therapy is an effective alternative. There appears to be an increasing rate of resistance to clarithromycin and metronidazole in parts of Asia, leading to reduced efficacy of PPI-based triple therapy.<sup>34</sup> The recommended doses are a twice daily, seven-day regimen of a proton pump inhibitor (omeprazole 20 mg, lansoprazole 30 mg, pantoprazole 40 mg) or ranitidine bismuth citrate 400 mg, plus clarithromycin 500 mg and amoxicillin 1000 mg, or plus clarithromycin 500 or 250 mg and metronidazole 500 mg.<sup>35,36</sup> This usually result to eradication of H. pylori infection in 80-90% of cases. In case of lack of efficacy, the 7-14 day treatment may be repeated using triple therapies (PPI + 2 antibiotics) substituting the antibiotic with the metronidazole or tetracycline, or

quadruple therapies (PPI + bismuth citrate + 2 antibiotics). Side effects during eradication treatments occur in about 15 to 30% of patients.<sup>37</sup>

### *Non-pharmacologic Interventions*

Reinforce advice on diet and lifestyle modification.

### *Patient Outcomes*

On second visit, the patient must have improvement in symptoms and must be able to do usual activities of daily living or work. An improved quality of life may also be achieved based on simple instrument.

## **Continuing Visit**

### *History and Physical Examination*

Evaluate the full 4 week treatment. If there is improvement but not total resolution of symptoms, the family physician may extend treatment until 8 weeks. Consider referral to a specialist service for patients of any age with gastro-oesophageal symptoms that are non-responsive to treatment or with H pylori that has not responded to second-line eradication therapy.<sup>8</sup>

### *Laboratory Tests*

If there is response to treatment, the laboratory tests that showed positive results may be repeated after 3-6 months to monitor cure or further response to treatment. For patients on long-term NSAID therapy fecal occult blood testing may be done. Renal function may also be monitored in high-risk patients.<sup>38</sup>

### *Pharmacologic Interventions*

Dyspepsia is a recurrent illness. Some people may need long-term and intermittent management of dyspepsia symptoms. Patients may need to be taught on self-

management when appropriate. PPI or H2 blocker therapy to the lowest dose needed to control symptoms should be advised on an 'as needed' basis with people to manage their own symptoms. Patients on long-term management self-management should have an annual review of their condition.<sup>8</sup>

## **Recommendations for Implementation**

### *Clinic Level*

Quality improvement strategy is recommended for implementation of this pathway. This will involve pre- and post-intervention data collection using records review. Intervention strategies may be feedback, group consensus or incentive mechanisms. This strategy has been shown to be effective in improving the quality of care for patients with dyspepsia. Adherence to guideline criteria increased significantly among family physicians after the intervention (from 55% to 75%).<sup>39</sup>

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