National Consensus on The Management of Constipation in Indonesia 2010

The Indonesian Society of Gastroenterology (ISG)

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ABSTRACT

Constipation is a common complaint in our daily practice, which may occur in young adult or elderly patients. Recently, the incidence has been increasing; however, most patients try to have self-medication using over-the-counter (OTC) drugs, which is usually inappropriate. Moreover, there has been unequal distribution of knowledge and vigilance of medical practitioners, both general physician and specialist doctors on the constipation issue. Therefore, patients usually present with greater complications.

The Organizing Committee of Indonesian Society of Gastroenterology or Pengurus Besar Perkumpulan Gastroenterologi Indonesia (PB PGI) considers that it is important to compose a National Consensus on the Management of Constipation in Indonesia. The Consensus is expected to be a guideline for doctors to deal with patients who have constipation in their daily practice, so that optimal results could be achieved.

Nowadays, there are new data on definition, pathophysiology, diagnosis and management of constipation; thus, the Organizing Committee of ISG feels that it is necessary to revise the established consensus. We expect that the consensus may bring advantages for medical practitioners in Indonesia and in general, it may cause community health improvement.

Key words: constipation, laxative.

INTRODUCTION

Constipation, which in layman’s term is known as passing hard stool, is a common problem that has been frequently experienced by most people. Actually, constipation is not a disease; it is merely a symptom that is characterized by infrequent defecation less than three times a week or difficulties in passing hard stools. In some people, constipation has become a routine problem; therefore, it has been regarded as a common issue. On the other hand, it is an abnormal condition which subconsciously will impair daily activities and ultimately, it will cause significant effect on quality of life.¹²

The incidence of constipation is increasing each year with increasing community awareness on the importance of good health as well as greater advances in medical technology, particularly the studies on gastrointestinal motility that generally may improve diagnostic modalities and management of constipation. On the contrary, the knowledge and ability of medical practitioners in establishing diagnosis and comprehensive management on constipation have not been equally distributed. Moreover, the availability of diagnostic facilities varies among different regions.

Consequently, the Organizing Committee of ISG composed a National Consensus on the Management of Constipation in Indonesia in 2006, which has been expected to be a guideline for physicians in managing patients with constipation, especially the adult patients. Nevertheless, the knowledge of constipation is increasing and current data are emerging, particularly on definition, pathophysiology, diagnosis and treatment of constipation. It encourages the Organizing Committee of ISG to revise the established consensus. When composing the consensus, the Committee obviously referred to other similar
consensus that had been composed by other medical center worldwide, which usually were established on the evidence-based medicine.

DEFINITION

Constipation is a sense of incomplete defecation, which is characterized by the passage of stools fewer than 3 times a week or difficulties in stool evacuation due to passing hard stools. Constipation is a clinical symptom, not a disease.

The definition of constipation based on World Gastroenterology Organization Practice Guidelines 2007 is differentiated based on symptoms experienced by the patient (patient’s view) and clinical evaluation (clinical view).3

The patient’s view may be different, but some of them regard constipation as straining (52%), while for others, it means hard, pellet-like stools (44%), or an inability to defecate although there is a desire of defecation (34%), or infrequent defecation (33%).4

While the clinical view suggests two criteria systems, i.e. the functional constipation criteria and constipation type of Irritable Bowel Syndrome (IBS), which are consistent with the Rome III Criteria are as the following:

Irritable Bowel Syndrome

Recurrent abdominal pain or discomfort* at least 3 days/month in the last 3 months associated with two or more of the following:4,5
1. Improvement with defecation
2. Onset associated with a change in frequency of stool
3. Onset associated with a change in form (appearance) of stool

Criteria fulfilled for the last 3 months with symptom onset are at least 6 months prior to diagnosis.

* “Discomfort” means an uncomfortable sensation not described as pain

In pathophysiology research and clinical trials, a pain/discomfort frequency of at least 2 days a week during screening evaluation is recommended for subject eligibility.6,7

Functional Constipation7,8

1. Must include two or more of the following:
   a. Straining during at least 25% of defecations
   b. Lumpy or hard stools in at least 25% of defecations
   c. Sensation of incomplete evacuation for at least 25% defecation
   d. Sensation of anorectal obstruction/blockage for at least 25% of defecations
   e. Manual maneuvers to facilitate at least 25% defecations (e.g. digital evacuation, support of the pelvic floor)
   f. Fewer than three defecations per week

2. Loose stools are rarely present without the use of laxatives

3. Insufficient criteria for irritable bowel syndrome (IBS)

Criteria fulfilled for the last 3 months with symptom onset are at least 6 months prior to diagnosis

EPIDEMIOLOGY

Constipation is a common problem, especially in Western countries. In the United States, the prevalence of constipation is 2-27% with 2.5 million visits to doctors and almost 100,000 hospitalizations per year.9

A survey in people over 60 years of age in some cities of China showed high incidence of constipation as high as 15-20%. Other report of a randomized trial in people age 18-70 years in Beijing demonstrated approximately 6.07% incidence of constipation with male to female ratio of 1: 4.1

The incidence of constipation is increasing due to changes in people’s dietary composition and the effect of sociopsychological factors.

Data from Cipto Mangunkusumo Hospital, Jakarta between 1998-2005 showed that of 2,397 colonoscopy procedures, 216 (9%) of them were performed for an indication of constipation and colorectal malignancy was found in 7.95% cases.4

RISK FACTORS3,10

The risk factors in developing constipation are:

• Sex
   Some countries provide different data reports. Based on WGO report, there are more female than male patients who had functional constipation.
• People over the age of 40 years
• Patients with recent abdominal or perianal/pelvic surgery
• Late pregnancy
• Limited mobility
• Inadequate dietary fluid or fiber
• Medication (polypharmacy), especially in the elderly patients
• Laxative abuse
• Known comorbidities (see Tables 1 and 2)
• Terminal state patients
• Travel
• History of chronic constipation
• Idiopathic slow-transit constipation and colonic inertia, especially in young women under the age of 25
• Psychological factors

PATHOPHYSIOLOGY

The pathophysiology of constipation can be divided into primary and secondary constipation. It is called primary constipation if examination reveals no organic or biochemical abnormalities; while secondary constipation includes constipation that is caused by an organic disease or other condition.

Primary Constipation

Primary constipation can be subdivided into the following 3 groups: normal transit constipation (functional constipation), slow-transit constipation, anorectal dysfunction

a. Normal transit constipation
   • It is the most common subtype.
   • Constipation is caused by difficult evacuation of hard passing stools.
   • The symptoms are bloating and abdominal discomfort.

b. Slow transit constipation
   • It occurs more commonly in female patients
   • The symptoms are bloating, abdominal discomfort and the absent of urgency to defecate

c. Anorectal dysfunction (pelvic floor dysfunction)
   • There is dyssynergia of pelvic floor muscle and anal sphincter or abnormal anorectal structure (such as rectal intussusceptions, rectocele)
   • The symptoms are straining defecation, fecal impaction, the need to perform digital evacuation of stool. If there is prolonged pain, it is usually associated with hemorrhoid and anal fissure.

Secondary Constipation

It is caused by other diseases or conditions as shown on Table 1.

DIAGNOSIS

To establish the diagnosis of constipation, evaluation is performed based on history taking, physical examination, laboratory investigation and identification of alarm signs that demand immediate exploration of organic causes.8

Table 1. Diseases or conditions that cause constipation

<table>
<thead>
<tr>
<th>Extrinsic</th>
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<tbody>
<tr>
<td>- Inadequate dietary fiber and fluid</td>
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<tr>
<td>- Intestinal flora imbalance</td>
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<td>- Ignoring urge to defecate</td>
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<table>
<thead>
<tr>
<th>Mechanical obstruction</th>
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<tbody>
<tr>
<td>- Colonic cancer</td>
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<tr>
<td>- External compression of malignant lesion</td>
</tr>
<tr>
<td>- Stricture: diverticular or post-ischemic disease</td>
</tr>
<tr>
<td>- Rectocele (if large)</td>
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<tr>
<td>- Post-surgical abnormalities</td>
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<tr>
<td>- Megacolon</td>
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<tr>
<td>- Anal fissure</td>
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<table>
<thead>
<tr>
<th>Metabolic condition</th>
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<tbody>
<tr>
<td>- Diabetes mellitus</td>
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<tr>
<td>- Hyperthyroidism</td>
</tr>
<tr>
<td>- Hypercalcemia</td>
</tr>
<tr>
<td>- Hypokalemia</td>
</tr>
<tr>
<td>- Hypomagnecemia</td>
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<tr>
<td>- Uremia</td>
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<tr>
<td>- Heavy metal intoxication</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Miopathies</th>
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</thead>
<tbody>
<tr>
<td>- Amyloidosis</td>
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<td>- Scleroderma</td>
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<table>
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<tr>
<th>Neuropathies</th>
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</thead>
<tbody>
<tr>
<td>- Parkinson disease</td>
</tr>
<tr>
<td>- Medulla spinalis trauma or tumor</td>
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<tr>
<td>- Cerebrovascular disease</td>
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<tr>
<td>- Multiple sclerosis</td>
</tr>
<tr>
<td>- Aganglionosis (Hirschprung's disease)</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Other conditions</th>
</tr>
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<tbody>
<tr>
<td>- Depression</td>
</tr>
<tr>
<td>- Degenerative arthritis</td>
</tr>
<tr>
<td>- Autonomic neuropathy</td>
</tr>
<tr>
<td>- Cognitive disorder</td>
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<tr>
<td>- Immobility</td>
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</tbody>
</table>

History Taking

• Characteristics of constipation (frequency, rectal sensation, difficulties during defecation, fecal consistency)
• Associated gastrointestinal symptoms
• Comorbidities (Table 1)
• Medications (Table 2)
• Nutrition: inadequate dietary fiber and fluid intake
• Immobilization and limited physical activities
Alarm Signs:
- Hematochezia
- Abdominal mass
- Family history of colorectal cancer and IBD
- Significant weight loss
- Anorexia
- Chronic nausea and vomiting
- Constipation occurs for the first time and exaggerates
- Acute constipation in elderly patients
- Anemia with unknown etiologies

Physical Examination
Systematically physical examination includes:
- Vital signs and nutritional status
- Abdominal examination:
- Inspection: post-surgical scars, abdominal distention
- Palpation-percussion: abdominal mass, signs of acute abdomen
- Auscultation: bowel sound
- Anorectal examination (digital examination)
- Sphincter condition
- Fecal presence and condition
- Anorectal abnormalities: stricture, hemorrhoid, rectal prolaps, tumor and others
- Neurological evaluation

Evaluation on Fecal Form and Consistency
The evaluation is according to the Bristol Stool Chart, which could be used to predict transit time.

Table 2. Medications that may cause constipation

<table>
<thead>
<tr>
<th>Classes</th>
<th>Examples</th>
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<tr>
<td>Prescribed drugs</td>
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</tr>
<tr>
<td>- Opiates</td>
<td>Morphine, codeine, doveri</td>
</tr>
<tr>
<td>- Anticholinergic agents</td>
<td>Clidinium, belladonna</td>
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<td>- Tricyclic antidepressant</td>
<td>Amitriptyline, nortriptyline</td>
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<td>Verapamil hydrochloride</td>
</tr>
<tr>
<td>- Antiparkinson drugs</td>
<td>Amantadine hydrochloride</td>
</tr>
<tr>
<td>- Sympathomimetic drugs</td>
<td>Ephedrine, terbutaline</td>
</tr>
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<td>- Antipsychotic drugs</td>
<td>Chlorpromazine</td>
</tr>
<tr>
<td>- Diuretics</td>
<td>Furosemide</td>
</tr>
<tr>
<td>- Antihistamine drugs</td>
<td>Diphenhydramine</td>
</tr>
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Over-the-counter drugs
- Antasids
- Especially aluminium-containing drugs
- Calcium supplements
- Iron supplements
- Antidiarrheal drugs
- Loperamide, attapulgite
- NSAID
- Ibuprofen

Diagnostic Examinations
Diagnostic examinations are performed as necessary to explore the cause of constipation, which includes:
- Laboratory examination: Hemoglobin, hematocrit, platelet and leukocyte count, differential count, urinalysis, stool analysis, glucose blood level, electrolyte (Na, K, Cl, Ca), thyroid function test
- Radiological imaging: plain abdominal x-ray, barium enema, CT colonography
- Colonoscopy
- Colorectal physiological examination
- Colonic transit test
- Anorectal manometry
- Balloon expulsion test and defecography

Complication of Chronic Constipation
- Rectal prolapse
- Hemorrhoid bleeding
- Anal fissure
- Fecal impaction that may cause colonic obstruction or rectal ulcer (stercoraceous ulcer) that may result in bleeding/perforation
- Recurrent urinary tract infection resulting from urethral due to fecal mass

Figure 1. Bristol Stool Chart

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- Antidiarrheal drugs
- Loperamide, attapulgite
- NSAID
- Ibuprofen
Patients with constipation should be treated comprehensively to restore their physiological defecation function, which includes considering constipation causes.

In patients with chronic constipation who do not have any alarm signs, age <40 years, no abnormalities revealed on the digital examination, and is assumed without secondary constipation, empirical treatment could be initiated.

Empirical treatment consists of non-pharmacological and pharmacological treatment.

a. Non-pharmacological treatment (life-style modification):
   - Education on constipation
   - Improving dietary fiber intake and adequate fluid intake (minimal 30-50 cc/kgBW/day for healthy adult with normal activity)
   - Consuming probiotic products (Bifidobacterium sp. Strain such as Bifidobacterium animalis lactis DN-173 010; for example ACTIVIA™)
   - Encouraging physical activities
   - Managing defecation habits:
     - Avoid straining
     - Customize toileting habit after a meal (exercising the post-prandial bowel movement reflex) or the person’s usual time that has been considered as appropriate and adequate.
   - Avoid medication that may cause constipation.

b. Pharmacological treatment*16
   A. Laxatives
      1. Bulk laxative: psyllium, plantago ovata, methylcellulose
      2. Osmotic laxatives:
         a. saline laxatives: magnesium hydroxide, sodium phosphate
         b. unabsorbed disaccharides: lactulose
         c. sugar alcohol: sorbitol, manitol
         d. polyethylene glycol (PEG)
      3. Stimulant laxatives: bisacodyl (such as: DULCOLAX®), castor oil, sodium picosulphate, stool softener (diocetyl sodium sulfosuccinate).17
      4. Rectal enema/suppositories: bisacodyl (such as: DULCOLAX®), phosphate enema
      5. Lubiproston (specific CIC-2 chloride channel activator)**
   B. Non-laxatives: Prokinetics

* For further detail of doses, see appendix
** When the consensus is written, it has not been available in Indonesia

The empirical treatment is evaluated for 2-4 weeks. If there is no improvement, further investigation should be conducted.11

In patients with slow transit constipation, combined treatment of stimulant laxatives and prokinetics is recommended on top of the non-pharmacological treatment.

Patients with anorectal dysfunction (pelvic floor dysfunction) may be recommended to have biofeedback treatment or injection of type A botulinum toxin into puborectalis muscle in addition to non-pharmacological treatment and laxatives.

For secondary constipation, treatment is aimed to overcome the underlying disease as well as to treat constipation.

Surgical treatment is considered for constipation that shows no response against various pharmacological treatment; however, it could only be performed if there is no anorectal abnormality.

Specific Situations
1. The elderly
2. Pregnancy and lactation
3. Diabetic patients
4. Palliative / terminal care

The Elderly
The main problems for the elderly are lack of mobility and polypharmacy. Treatment is the same as for younger adults, with an emphasis on changing lifestyle and diet/probiotics (Bifidobacterium animalis lactis DN-173 010, such as ACTIVIA™). In elderly patients who have lack of mobility, it is better to use stimulant laxatives instead of bulking agents. It is important to try and stop potentially constipating drugs.18

Pregnancy and Lactation
Use high dietary fiber, increase fluid intake and perform pregnancy exercise program as the main treatment options. Laxatives can be used if this fails. Use drugs only for short periods. Drug safety is principal concern in pregnancy. Senna is considered safe at normal doses, but caution is necessary when it is used for high-risk pregnancy. Bulking agents are thought to be safer than stimulant laxatives. Bulking agents and lactulose are not absorbed by the intestines; therefore, they are safe for pregnant and lactating women. Senna, in large doses, will be secreted in the breast milk and may cause diarrhea and colic in infants.

Diabetic Patients
Bulking agents are safe and useful for diabetic patients unable to increase their dietary fiber. Using
laxatives containing lactulose and sorbitol may increase the blood glucose level.

**Terminal/Palliative Care**

Prevention of constipation is extremely important in the terminally-ill patients. Rehydration and administering laxative suppositories are of great importance in terminally-ill patients who have difficult oral/enteral intake and abnormalities of intestinal passage. If the feces are hard and the rectum is full, glycerin clisma or docusate suppositories are recommended. If the feces are soft, stimulant laxatives such as senna or bisacodyl (for example: DULCOLAX®) can be used. Lactulose is an alternative treatment, although it can lead to bloating and possible postural hypotension (fluid shift to the bowel).

**Figure 2. Algorithm on the management of constipation at the primary health care services**

**Figure 3. Algorithm on the management of constipation at greater health care centers**

**Figure 4. Algorithm on the management of normal transit constipation**

**Figure 5. Algorithm on the management of slow transit constipation**

**Figure 6. Algorithm on the management of anorectal dysfunction**
Table 3. Medications used in constipation treatment

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Regular Dose</th>
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<tbody>
<tr>
<td><strong>1. Bulk laxatives</strong></td>
<td></td>
</tr>
<tr>
<td>- Psyllium</td>
<td>Bulk powder: 1 tea spoon in 240 cc fluid, per oral, 1-3 times daily</td>
</tr>
<tr>
<td>- Plantago ovata</td>
<td>3.25 g in 150 cc fluid per oral, 1-3 times daily</td>
</tr>
<tr>
<td>- methylcellulose</td>
<td>1 table spoon in 240 cc cold water, orally, 1-3 times daily</td>
</tr>
<tr>
<td><strong>2. Osmotic laxatives</strong></td>
<td></td>
</tr>
<tr>
<td>- Magnesium hydroxide (milk of magnesia)</td>
<td>Preparation: 400 mg/5 ml (oral suspension) → 30-60 ml/day, orally, with fluid</td>
</tr>
<tr>
<td>- (monobasic) sodium phosphate</td>
<td>Preparation: 2.4 gr/5 ml: 20 ml/day orally</td>
</tr>
<tr>
<td><strong>Unabsorbed disaccharides</strong></td>
<td></td>
</tr>
<tr>
<td>- Lactulose (10 g/15 ml)</td>
<td>Initial: 15-45 ml/day orally, single or divided dose</td>
</tr>
<tr>
<td>- (oral suspension)</td>
<td>Maintenance: 10-25 ml/day; orally</td>
</tr>
<tr>
<td>- (for example: Dulcolactol®)</td>
<td>Maximal dose: 60 ml/day</td>
</tr>
<tr>
<td><strong>Sugar alcohol</strong></td>
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</tr>
<tr>
<td>- Sorbitol (5 g/sachet)</td>
<td>2 sachet per oral before bedtime and 1 sachet before breakfast</td>
</tr>
<tr>
<td>- Mannitol, 1-2 times, 15-30 ml/day</td>
<td></td>
</tr>
<tr>
<td>- Polyethylene glycol (PEG)</td>
<td>Bulk powder: 1 tablespoon (17 g) in 240 ml fluid, once daily. Recommendation: maximal duration &lt;2 weeks</td>
</tr>
<tr>
<td><strong>3 Stimulant laxatives</strong></td>
<td></td>
</tr>
<tr>
<td>- bisacodyl (tab 5 mg) (for example Dulcolax®)</td>
<td>1-2 tablet, once daily before bedtime</td>
</tr>
<tr>
<td>- Senna-fiber</td>
<td>-</td>
</tr>
<tr>
<td>- Sodium picosulphate (such as Laxoberon®)</td>
<td>tablet 8 mg: 1-2 tablet per oral before bedtime syrup (4 mg/5 ml): 10-20 ml per oral before bedtime</td>
</tr>
<tr>
<td>- dioctyl sodium sulfosuccinate</td>
<td>2 times 100 mg/day</td>
</tr>
<tr>
<td><strong>4. Rectal enema/suppositories</strong></td>
<td></td>
</tr>
<tr>
<td>- phosphate enema</td>
<td>120 ml/day</td>
</tr>
<tr>
<td>- bisacodyl (such as Dulcolax® 10 mg supp)</td>
<td>1 rectal suppository daily</td>
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<tr>
<td><strong>5. Prokinetics</strong></td>
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REFERENCES