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Review On Constipation During Pregnancy

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Abstract-During pregnancy, constipation is a frequent symptom. Simple constipation, which affects normal gastrointestinal function and is caused by a combination of hormonal and mechanical causes, accounts for the majority of cases. Nonetheless, many women experience constipation before becoming pregnant, and their symptoms get worse during pregnancy [(1)]. During pregnancy, constipation is a frequent problem. Infrequent bowel movements, hard or scybalous feces, or considerable straining are some of its symptoms. Women who have constipation for the first time during pregnancy typically do not require a thorough evaluation. Simple laxatives or dietary changes are effective for the majority of individuals. Clinical trials have not assessed the effectiveness of several laxatives during pregnancy. Research backs up the use of senna and fiber supplements for therapy. The potential side effects of using a pharmaceutical product to relieve constipation during pregnancy must be considered. The majority of laxatives are classified as pregnancy categories B or C. Increasing fiber intake through diet or supplements is part of first-line therapy. Some people may benefit from osmotic laxatives. Osmotic or stimulant laxatives are often used for a brief period of time only in patients who do not respond to bulking medications or dietary modifications [(2)]. During pregnancy, gastrointestinal disorders are prevalent. The most prevalent gastrointestinal ailment during pregnancy is constipation, which is surpassed only by nausea. At some point throughout their pregnancy, up to 40% of women will experience constipation. Only treatment-refractory patients are sent to the gastroenterologist; most women will see their primary care physician or obstetrician[(3)].

KEY WORDS - Constipation, Gastroenterologist, Pregnancy, Laxative, Hormone.

I. INTRODUCTION

Constipation is not a medical condition. Each person experiences it differently, and it can have an impact on day-to-day functioning and interpretation. Constipation is a problem that affects the stomach's intestinal tract and can cause stiffness, pain, and uncomfortable storage for days. Constipation can be characterised by frequent bleeding, anal fissures, a stiff, big, or bulky chair, or a type of defecation that occurs less than three times per week. Patients with severe illnesses frequently experience this issue, which can cause them to suffer greatly from both unpleasant medical symptoms and potential psychological issues[(4)]. Between 11% and 44% of pregnant women have constipation. Studies carried out in Turkey have shown that between 38.8% and 47% of pregnant women have constipation. Constipation that develops during pregnancy has a complex etiology. One of these aspects is that the rise in internal abdominal pressure during pregnancy causes alterations in the pelvic organs and the structures supporting the urethra, which are principally in charge of the defecation process. Decrease in bowel motions brought on by the rise in progesterone levels during pregnancy is another reason. Constipation is also more common during pregnancy due to the uterus's growth, the mother's decreased daily activity, stress, taking iron and calcium supplements, not drinking enough water, and dietary changes[(6)]. Constipation during pregnancy and after birth is mostly caused by morning sickness, organic changes in the abdominal cavity, and physical water balance. Constipation is also more likely during pregnancy because high progesterone suppresses intestinal peristalsis. Constipation during pregnancy poses serious dangers for both expectant moms and their unborn children. First, it makes anorectal illness more common. Anaemia is often the

result of bleeding with haemorrhoids. Two-thirds of pregnant women experience anal symptoms during and after pregnancy, with constipation being the primary risk factor. Constipation can be brought on by a lack of movement, fluids, and fibre. Usually, non-prescription drugs or dietary and mobility adjustments are used to manage constipation. A doctor may prescribe medicine, medication adjustments, or other treatments for constipation[5].

II. TYPES OF CONSTIPATION

Primary Constipation –An rectal dysfunction, delayed transit constipation, and normal transmit constipation are the three main categories of constipation causes. The most prevalent type of constipation is functional constipation, sometimes referred to as normal transit constipation. Fecal transit through the colon is usually normal in patients with functional constipation. A protracted delay in the movement of feces through the colon is a characteristic of slow tramit constipation. Patients may experience irregular bowel movements and abdominal bloating. It's unknown what causes sluggish transit constipation, however theories include noradrenergic neuro-muscular transmission system abnormalities, myenteric plexus abnormalities, and faulty cholinergic innervation. Ineffective pelvic musculature cooperation in the evacuation mechanism is known as anorectal dysfunction. These patients are more likely to express a need for digital manipulation, a sense of obstruction, or an incomplete evacuation. Defecation may not have been learnt as a child, or anorectal dysfunction may be an acquired behavioral problem. Although there are a number of distinct subtypes of primary constipation, patients may exhibit symptoms that similar to those of multiple subtypes. There are two types of constipation: normal-transit and slow-transit, which refer to extended delays in the movement of feces through the colon Normal-transit constipation may be accompanied by no obvious disease or by functional obstruction, such as anal sphincter and pelvic floor muscle dysfunction (anism which makes it difficult to remove feces from the anorectum)[9]. Despite the lack of research on the topic, normal-transit constipation is arguably the most prevalent type of constipation that general practitioners see. Patients may have constipation even though their transit through the colon and stool frequency are normal. Despite the inability to demonstrate reduced colonic transit, his group of patients had symptoms such as stomach pain or discomfort, difficulty with evacuation. If a patient does not maintain a daily diary, their report of the frequency of their bowel movements is overstated. Some members of this group may have diminished rectal feeling, greater rectal compliance, or both, according to research.

Slow-transit constipation-

A prolonged intestinal transit time is present in around half of patients whose symptoms are resistant to more fiber. Although diurnal regularity is typically preserved. this patient group has been observed to have significantly reduced colonic responses after meals and upon waking up in the morning, as well as significantly impaired propulsive colonic motoractivity. After treating the underlying problem (e.g.. by using biofeedback), colon transit lengths may recover to normal, therefore slow transit in certain people may be the outcome of an underlying illness of the bowels.

Reduced motility in slow-transit constipation can have a number of causes. Strong contractions known as high amplitude propagated contractions (HAPCs) occur when pressure waves travel from multiple locations in the colon to the rectum. Numerous studies have shown that HAPCs are much lower in people who are constipated [10].Abnormalities of the myenteric plexus, which are typified by a rise in nuclei of different sizes within ganglia and a decrease in argyrophilic neurons and axons, are one possible source of these inadequacies. Because interstitial cells of Cajal are significantly smaller in patients with slow-transit constipation, they may also be significant. Cajal interstitial cells are necessary for the production of smooth muscle's electrical slow wave, which regulates the muscle's contractile action[11]

Uneven and diminished contractile activity results in lower intestinal transit when there is no electrical slow wave. An increase in extrinsic inhibitory activity to the colon or a decrease in excitatory extrinsic nerve input to the gut are two possible outcomes. The release of acetylcholine from enteric postsynaptic cholinergic neurons is the main force behind the spontaneous contractile action of colonic smooth muscle. On both neuro-neuro-nal and neuro-eftor synapses in the enteric nervous system (ENS), acetylcholine functions as a neurotransmitter. Patients who have constipation exhibit a reduced colonic motor response to cholinergic stimulation in the descending colon when compared to healthy individuals. The gastrointestinal (GI) tract's enterochromaf-cells emit serotonin [5-hydroxytryptamine (5-HT)], which sets off peristaltic and secretory reflexes by activating neurons in the myenteric plexus. Although the failure of S-HT signaling is widely recognized to be the cause of intestinal motility problems, it is still unclear whether this is due to a lack of 5-HT perse or to problems with 5-HT re-uptake processes, receptor density, and/or function.

Chronic Constipation-

With an estimated prevalence of 2% to 24%, chronic constipation (CC) is a very prevalent disorder. As people age, the prevalence of CC rises and can even reach 80% among inhabitants of nursing homes. Constipation has serious negative effects on a person's quality of life, and it can be expensive for both the patient and society at large. A number of classifications have been put up for CC, a diagnosis that is symptom-based. There are two types of constipation: primary (also known as functions for idiopathic) and secondary to other illnesses. The most well accepted diagnosis of chronic idiopathic constipation nowadays is the ROME III criteria but secondary constipation is not as clearly defined. CC and constipation-predominant irritable bowel syndrome (IBS-C) are distinguished by the ROME III criteria. The primary distinction is that IBS-C is characterized by a significant amount of pain. It can be very challenging, if not impossible, to distinguish between the two conditions in clinical practice. Although a number of biomarkers have been suggested for this purpose, none have received enough validation or have been applied extensively. Our knowledge of the pathophysiology behind CC has advanced over the past ten years, and a number of novel medications or therapeutic approaches have been proposed. The review of contemporary CC management that follows is clinically focused [(12)].

Secondary Constipation-

A complete history and physical examination can rule out these illnesses. According to a consensus guideline published by the American Gastroenterological Association (AGA), most patients should also have tests for serum glucose, thyroid stimulating hormone, creatinine, calcium, and a complete blood count.Patients who have not had a recent exam, are losing weight, or are also suffering rectal bleeding should have a sigmoidoscopy or colonoscopy to rule out colon cancer. Drug usage, particularly those that impact the central nervous system, nerve transmission, and smooth muscle function, is a significant secondary cause of constipation. According to one study, 40% of individuals who complained of constipation were taking drugs that are known to make them feel that way.

Additionally, over-the-counter medications such as calcium or aluminum-containing antacids and iron supplements can cause constipation. Constipation is most often caused by irritable bowel syndrome. Because it is usually accompanied by episodes of diarrhea, cramps, and lower abdominal pain that are usually eased by defecating, it can be differentiated from functional constipation[(13)].

III. PREVALENCE-

In the first trimester, 24% of women experienced constipation, and in the second, 26%. In the third, 16%. and 24% following childbirth, a research found.

A different study found that 32.4% of pregnant women globally experienced constipation, with 21.1% of cases happening in the first trimester, 34% in the second, and 30.3% in the third.

Certain studies have found that multiparous women (those who have had previous pregnancies) are more prone to develop constipation than primiparous women (first-time mothers)[(14)].

Most pregnant women experience constipation, which is a typical digestive system issue.

Constipation was more common in women than in males, with an average prevalence of 16% in the overall population, ranging from 0.7 to 79%[(15)].

IV. EPIDEMIOLOGY OF CONSTIPATION-

Functional constipation in China was 4% for men and 8% for women. Across all age categories, functional constipation was more common in women than in males. The uterus increases the rectum's curvature by compressing it inward towards the pelvic cavity, according to the physiological anatomy of females. Women's intestinal transmission times are longer than men's because high progesterone can slow down the colon's and small intestine's rate of transmission. There is some degree of damage to the female pelvic floor muscle and nerve plexus in multiparous. In terms of psychological aspects, a 28-year epidemiological survey conducted in Sweden revealed that, among young and middle-aged people with gastrointestinal symptoms, the incidence of gastrointestinal disorders is substantially greater in women than in males. The primary causes of gastrointestinal disorders are exhaustion and neutropenia, and there is a strong link between gastrointestinal disorders and panic disorder, worry, and terror. Constipation symptoms are more common in female patients than in male individuals. Additionally, having perianal eczema, an anal fissure, an anal fistula, haemorrhoids, or other anorectal conditions before becoming pregnant increases your risk of experiencing constipation during pregnancy[(5)]. Women with a pre-pregnancy BMI of greater than 24 were more likely to experience functional constipation (27.34%) than those in other BMI groups. Women who are overweight may favour a diet that is higher in fat and protein and lower in vegetables, which can result in dyspepsia and poor dietary fibre consumption. Furthermore, because of their low levels of activity, these

ladies can have trouble digesting food. Consequently, a low-fiber diet and less activity may make postpartum constipation more likely. Pregnant women may have higher prevalence rates because their bodies produce more progesterone, they exercise less, and they consume more protein and fat to meet their nutritional needs[16].

V. RISK FACTOR-

Constipation can result in persistent conditions such pelvic muscle dysfunction, worse productivity and quality of life, higher living expenses, and more medical care. Constipation can also raise the risk of haemorrhoids and prolong the time it takes for the digestive system to recover after giving birth. Pregnancy-related constipation can be brought on by hormonal fluctuations, changes in the foetal and placental development, and changes in nutrition and physical activityThis study aims to determine the prevalence of constipation in pregnant women and its correlation with gestational age, water and fibre intake, and the degree of physical activity[17].

VI. CAUSES-

Constipation is most common when waste or stool passes too slowly or cannot be easily removed from the rectum across the digestive tract, causing the stool to become stiff and dry. Many possible causes of chronic constipation are:

1) Nutrition: Low fiber diet, low liquid intake, can cause worsen constipation. Dietary fiber helps permanent body traffic and increases most of the chair, but at the same time relaxes the chair. Consequently, primary constipation may be exacerbated by a diet high in fiber [18]. Dietary constipation is a minor issue that can be resolved with lifestyle modifications and non-pharmacological methods. Consuming additional fiber can also help prevent constipation since it speeds up the passage of food through the colon. All although soluble fiber was created with a diet that is not fiber independent (wheat-bran), increase the fiber consumption does not result in colonic migration[19].
2) Medicine: Some medications can cause chronic constipation. These drugs include anticholinergic drugs such as hyoscine, antipyretics agents such as morphine and codeine, antipsychotics such as baloperidol and clozapine, and antiepileptic drugs such as phenytoin and carbamazepine. Iron and Calcium are the causative agents of persistent constipation. When opoids are used continuously, persistent constipation results. Constipation persists when opoids are used consistently.The combination of opiates increases the tone of the internal anal sphincter and ileocecal area while decreasing the sensitivity of stomach motility and rectal dilution in comparison to stimulation. Consequently, they results in constipation by expending the time for excretion in the colon[8,18].
3) Psychological factors: Constipation patients frequently experience psychological morbidity in a number of domains such as depression and somatization. It has been demonstrated that individuals with persistent constipation, particularly those exhibiting symptoms of dyssynergic defecation, suffer from significant psychological issues.
4) Behavioural Factors: Restricting behaviour after difficult and painful intestinal movements is known to lead to functional constipation in children, leading to stool retention, rectal expression, and a succession of overflow placenta. This problem cunreturn to adulthood and return to the main causes of constipation in elderly hospital patients. Persistent ignoring the appeal to the chair can lead to fecal effects[20].
5) Rectum-Adsorbent dysfunction It demonstrates sensory motor abnormalities, which include sensory motor and biomechanical components, may contribute to the symptoms of people with chronic constipation. Constipation and functional contraceptive problems are unmistakably linked to this illness Causes of Metabolic and Endocrine Disorders that cause constipation include hypercalcemia, hypothyroidism, diabetes (DM)[21].
6) Hormonal changes: Variations due to duration of hormone levels or pregnancy can affect the intestines. During pregnancy, an increase in hormone experts leads the intestinal muscles, which relaxes and causes food and waste to move more slowly.
7) Closed colon or rectum: Defecation may be impeded by damage or modification to the tissues of the colon or rectum. Tumours in the large intestine, rectum or nearby tissues can also cause blockade[18].
8) Processed grains: Refined grains and their derivatives, like white bread, white rice and white pasta, have lesser fiber content and can lead to increased constipation compared to whole grains. This is due to the fact that processing eliminates the bran and germ sections of the grain. Specifically, the bran is rich in fiber, a nutrient that increases stool bulk and facilitates its movement[21].

Constipation is caused by certain hormones-

Progesteron: Progesterone is a naturally occurring muscle relaxant. Its elevated levels before menstruation and during pregnancy cat slow down the passage of food through the intestines, resulting in constipation.

Pregnancy: The body produces more progesterone during pregnancy, which can impair intestinal function and reset in constipation and delayed bowel movements.

Constipation before menstruation: Progesterone slows down the digestive tract, thus when levels rise before menstruation, it can also cause constipation[22].

Estrogen: Although progesterone is frequently associated with constipation, some study indicates that oestrogen may be the main cause of the condition rather than progesterone.

Menopause: As the digestive tract slows down during menopause, falling oestrogen levels may also be a factor in constipation[23].

VII. PATHOPHYSIOLOGY-

The uterus enlarges during pregnancy and starts to squeeze the rectum as the foetus grows. Muscle support is necessary for defecation. As abdominal pressure rises, abdominal muscular strength declines. The growing uterus compresses the abdominal organs during foetal growth and development, obstructing the sigmoid colon and causing recurrent constipation. Additionally, high progesterone levels are linked to constipation during pregnancy. Smooth muscle relaxation is encouraged by elevated progesterone, which also protects the health of the baby and the expectant mother. But it also prevents the bowel movement from passing through the stomach. Constipation symptoms are either directly or indirectly exacerbated by the inhibition. Another factor contributing to pregnant constipation is hypothyroidism[5].

VIII. SYMPTOMS-

1) Infrequent bowel movements
2) Difficult to pass stools
3) Constriction
4) A sense of incomplete bowel evacuation
5) Anorectal obstruction
6) Manual defecation techniques
7) Cramping in the abdomen and
8) Unusually small or large stools[5].

IX. TREATMENT-

Increasing fluid intake and dietary fibre, together with regular exercise, helps many patients who suffer from constipation. Improved bowel function may also result from probiotics that change the colonic flora. The second line of treatment is laxatives if they don't work[25].

All that may be needed is patient education, environmental changes, and reassurance that these symptoms are temporary and typical of pregnancy. Most patients will benefit from increasing their intake of fluids and dietary fibre. There is proof that pregnant women experiencing constipation can benefit from taking more nutritional supplements like bran or wheat fibre. Linseed is one of the ancient herbal treatments that have been utilised for temporary alleviation. Usually, this is combined with food or fluids, such bread or muffins. It should be mentioned that there is not enough proof to support its safety during pregnancy.

Because probiotics condition the colonic flora, they may also help to improve bowel function. When dietary modifications fail to reduce symptoms, laxatives are recommended [26]. It's critical to choose a laxative which is non-toxic, effective, well-tolerated, and does not dissolve in breast milk[27].Anticholinergics or antispasmodics, which are used to treat IBS, should not be used during pregnancy[26].

1. Bulk forming agents-

   Because they are neither absorbed or linked to a higher risk of abnormalities, bulk-forming agents are regarded as safe to use consistently throughout pregnancy. They may not, however, always work and may cause uncomfortable side effects like cramping, bloating, and gas[25]. By increasing faecal mass and promoting peristalsis, bulk-forming laxatives alleviate constipation. They are some of the greatest and safest laxatives available during pregnancy as they are not absorbed from the digestive system. This group includes methylcellulose, sterculia, ispaghula husk, and wheat bran. There have been no documented negative consequences on the foetus. Women should be informed that the benefits of bulk-forming agents may not be apparent for many days due to their sluggish action.

These medications are contraindicated in cases of faecal impaction and may not always be successful in alleviating acute symptoms[26].

2. Stool softners-
   Docusate sodium is also thought to be safe to use because it hasn't been linked to any negative effects during pregnancy in a lot of studies. In one instance, a mother's long-term use of docusate sodium during pregnancy was linked to the newborn's exhibiting symptoms of hypomagnesaemia[25]. Agents known as stool softeners, such as Docusate sodium, soften the faeces and make it easier to pass. They inhibit the jejunum's net absorption of glucose and bicarbonate while promoting the net outflow of water, potassium, chloride, and salt. Since several researchers have found no negative effects during pregnancy, docusate sodium is regarded as safe to use.
3. Lubricant laxative-
   Mineral oil is a nonprescription lubricant that has no negative side effects and is poorly absorbed from the digestive system. In order to keep more fluid in the stool and facilitate evacuation and lessen spraining, lubricant laxatives lower the surface tension of the liquid contents in the gut. Although this seems to be a theoretical rather than real concern, there is debate regarding whether long-term use decreases the absorption of fat-soluble vitamins[27].
4. Osmotic laxative-
   Polyethylene glycol (PEG), sorbitol, cellulose, magnesium sulphate or citrate, and salts (potassium chloride, sodium chloride) are examples of osmotic laxatives. They work by raising osmolar tension, which causes the colon to contain more water, which makes peristalsis and evacuation easier. PEG and lactulose have weak systemic absorption.Although there have been no negative outcomes linked to its use, people may encounter side effects like bloating and gas[25]. The preferred treatment for persistent constipation during pregnancy is PEG. Given that hyperosmolar laxatives are indigestible carbohydrates, they cause the GI tract to ferment, resulting an excess of gas, flatulence and abdominal bloating are common adverse effects.As a semi-synthetic disaccharide, Women with diabetes should avoid lactulose and those who need to follow a low-galactose diet[26].
5. Stimulant laxative-
   Because bisacodyl has a low bioavailability, there is little absorption. Senna is not easily absorbed systemically and does not seem to be linked to an increased incidence of deformities. However, using stimulant laxatives may cause unpleasant side effects for women, like cramping in the abdomen. Long-term usage of osmotic laxatives may potentially result in electrolyte imbalances[25].Bisacodyl and senna are examples of stimulant laxatives that work locally inthe large intestine by boosting colonic motility and reducing water absorption. Stimulant laxatives are more effective than bulk-forming ones. Still, because they might cause uterine contractions, stimulant laxatives should be taken carefully throughout the third trimester. Although not in senna itself, this has been reported in a number of anthraquinone derivatives. The gastrointestinal tract absorbs senna to a certain extent. There was no elevated risk of congenital malformations, according to a major case-control monitoring research. Because senna can be secreted in breast milk, women who are nursing should exercise caution. Because bisacodyl has a low bioavailability, only 5% of it is absorbed. Bisacodyl is regarded as safe for usage during pregnancy because it has not been linked to any teratogenic or fetotoxic adverse effects. Docusate sodium has two functions: it softens and it stimulates. It is an anionic wetting agent that permits salts and water to penetrate accumulated hard, dry faeces. There has been a case of newborn hypomagnesaemia following excessive docusate sodium consumption by the mother. Consequently, docusate sodium should only be used in pregnancy at minimal dosages in the event that no other treatments work. When docusate sodium is taken orally, it is eliminated in breast milk. Therefore, it should be used carefully around nursing moms.Fresh agents Prucalopride changes colonic motility, which provides the propulsive power for defecation, by activating the serotonin 5-HT4 receptor. As pregnancy category C medications, more recent medications like linaclotide and lubiprostone should only be used if the potential hazards to the foetus are outweighed by the inherent advantages. Guanylatecyclase-C receptor agonists include linaclotide. It is authorised for the treatment of mild to severe constipation-related irritable bowel syndrome (IBS-C). It reduces visceral pain by raising extracellular cyclic guanosine monophosphate (c-GMP), which is thought to do so by decreasing pain fibre activity. Furtherrmore, it raises the amount of intracellular cGMP, which causes more electrolyte (bicarbonate and chloride) to be secreted into the intestinal lumen. This results in more intestinal fluid, which facilitates and speeds up the transit of stool. Following therapeutic dosages, it is metabolised in the gastrointestinal tract

and is essentially undetectable in plasma. Information that can be used during pregnancy or breastfeeding is scarce.

Lubiprostone is a CIC-2 chloride-channel activator that acts locally, increasing motility and intestinal fluid output. It has been licensed and approved by NICE to treat chronic idiopathic constipation if invasive treatment is being considered after at least six months of failure with two distinct types of laxatives at maximum dosage. Negative foetal consequences have been observed in animal experiments due to maternal toxicity and overdosage (greater than the maximum dose advised for humans). These medications should be taken carefully because it is unknown if they are eliminated in breast milk.

6. Suppositories and enemas-

Enemas and ingestions Glycerine suppositories may be helpful for patients with faecal loading or impaction, in addition to oral laxatives as needed. Glycerine suppositories are safe to use during pregnancy, according to the UK Teratology Information Service. There are no published research on the teratogenicity of phosphate enemas used during pregnancy.

- How to stop Laxative-

Laxatives can be progressively stopped until regular bowel motions come easily. The frequency and consistency of the stools should be taken into consideration when reducing the laxative dosage. The likelihood of needing to restart treatment for recurrent faecal loading will be decreased with gradual discontinuation. When using a mixture of laxatives, it is best to reduce stimulant laxatives first and then discontinue one laxative at a time. Patients should be informed that it could take several months to wean themselves off such laxatives. Relapses are common and are treated by quickly increasing the laxative dosage. Long-term laxative treatment may be necessary for people whose constipation has a pharmaceutical or medical reason[26].

OVERVIEWOF COSTIPATION TREATMENT-

If constipation is brought on by a medication or a medical condition, it may be relieved by stopping the offending medication or by treating the underlying problem. .Nevertheless, some illnesses necessitate the administration of a drug in spite of its adverse consequences. Constipation is virtually always a side effect of opioid medication, but the severity of constipation varies depending on the opioid. According to one study, oral morphine was more likely to induce constipation than fentanyl (Duragesic).

Generally, when providing chronic opioid therapy, a prophylactic laxative should be considered since tolerance to opioids' constipating effects does not gradually develop.

For functional constipation, empirical treatment should be undertaken first if no secondary cause of the condition can be found. In order to promote bowel regularity, management should start with nonpharmacologic techniques. If these techniques are unsuccessful, laxatives should be used .The patient ought to be submitted to an expert for further examinations if the constipation is not improving with medication. Defecography, anorectalmanometry, colonic transit time measurement, balloon expulsion test to evaluate anorectal are a few examples of this. Rarely, surgery or biofeedback therapy could be necessary.

1. Non-pharmacologic agents-

For certain patients, keeping a stool journal could be useful in documenting the type of complaint, including the frequency, consistency, size, and level of straining of the stool.Since many patients believe they must have a bowel movement every day, therapy on simple lifestyle changes may help them see how regular their bowel movements are. Above all, patients should be taught how to identify and react to the urge to urinate.

2. Bowel training-

Going to the toilet might be a somewhat conditioned reflex. According to one study, the majority of individuals who have a regularly evacuate their bowels at approximately the same time every day. These are typically the greatest times to have a bowel movement because intestinal activity is at its peak immediately after meals and directly after waking up. It is recommended that patients attempt defecating in order to benefit from the gastrocolic reflex 30 minutes after meals and while the bowel is more active in the morning.

3. Dietary fibre intake-

In Western society, constipation is frequently caused by inadequate fibre consumption. According to studies, consuming more dietary fibre results in both bulkier stools and a shorter colonic transit time. To determine whether a sufficient quantity of fibre is consumed each day, a dietary journal could be useful. 20 to 35 gm of fibre per day is the suggested daily consumption. Patients who consume significantly less fibre should be encouraged to eat more bran, fruits, vegetables, and nuts,

among other foods high in fibre. One traditional remedy for constipation is prune juice. Up until the daily required intake is reached, it is advised to increase fibre consumption by 5 g per day every week. Bloating and excessive gas might result from introducing fibre into the diet too soon.

4. Fluid intake-
   Maintaining intestinal motility is thought to depend on drinking enough water. However, there is little evidence linking water to the occurrence of constipation, despite the notion that dehydration raises the risk of constipation. Faecal impaction may develop more frequently as a result of decreased fluid consumption.
5. Regular exercise-
   Physical inactivity is twice as likely to occur in people who are constipated. Sedentary individuals are more prone to experience constipation, according to another epidemiologic study. Constipation is commonly linked to prolonged bed rest and immobility[28]. Make exercise a regular component of your regimen to help prevent and treat constipation. Aim for 150 minutes or more a week of moderate aerobic exercise. It is the same as 30 minutes of aerobic activity five days a week. Lower digestive tract muscles can be stimulated by exercise. Stool is the waste product that this section of the intestine eliminates from the body[32].
6. Pharmacologic treatment-
   According to a systematic review, adults who used laxatives and consumed more fibre had better bowel movements than those who took a placebo. Additionally, nothing is known regarding the long-term advantages and disadvantages of fibre preparations and laxatives.
7. Bulk laxative-
   Both insoluble (cellulose) and soluble (psyllium, pectin, or guar) substances can be found in bulk laxatives. Most patients tolerate them well because they are hydrophilic, meaning they absorb the gut lumen's water content to soften the consistency and increase the bulk of the stool. Bulk laxatives are the most effective treatment for patients with functional normal transit constipation. Bulking agents, however, might not aid patients with anorectal dysfunction or slow transit constipation. According to a comprehensive study, bulk laxatives help with constipation symptoms such stomach pain and stool consistency.Bulk laxatives can cause bloating and excessive gas production, much like when you eat more meals high in fibre.
8. Emollient laxative-
   By reducing surface tension, emollient laxatives or stool softeners (such docusates) make it easier for water to pass through the intestine. Although they are usually well tolerated, psyllium works better to relieve constipation.According to one study, psyllium relieves constipation more effectively than stool softeners. Older persons with chronic illnesses do not benefit from stool softeners. Patients who experience painful defecation due to anal fissures or haemorrhoids may benefit more from stool softeners. Because of the risk of aspiration and the possibility to deplete fat-soluble vitamins, mineral oil is not advised.
9. Osmotic laxative-
   Saline laxatives, also known as osmotic laxatives, are hyperosmolar compounds that cause water to be released into the intestinal lumen through osmotic action. Oral magnesium citrate, magnesium hydroxide (Milk of Magnesia), and sodium biphosphate (Phospho-Soda) are the most often used osmotic laxatives. Since these compounds only act in the intestinal lumen and don't affect the body as a whole, they are generally regarded as being fairly safe. They may cause hypokalaemia, fluid and salt overload, and diarrhoea, though, and have been linked to electrolyte imbalance in the intestinal lumen. Patients with chronic renal insufficiency and congestive heart failure should therefore utilise them with caution.Hypermagnesemia may develop in people with chronic renal insufficiency as a result of long-term usage of laxatives containing magnesium. Lactulose, sorbitol, and polyethylene glycol (PEG) 3350 are other hyperosmotic laxatives. Bacteria convert indigestible substances like sorbitol and lactulose into organic acids and hydrogen. Abdominal distention and flatulence may result from poor absorption of certain substances. Compared to laxatives that contained senna, anthraquinone derivatives, or bisacodyl (Dulcolax), lactulose was more successful in causing a normal stool.
10. Stimulant laxative-
    Senna and bisacodyl-containing preparations are examples of stimulant laxatives. These laxatives promote water secretion into the gut and intestinal motility. Although they usually result in bowel motions within a few hours, the increased peristalsis may cause discomfort in the abdomen. Patients who may have intestinal blockage should not take stimulant laxatives. A brown-black discolouration

of the intestinal mucosa is known as melanosis coli that can result from long-term use of stimulant laxatives that contain anthraquinone[28].

NATURAL REMEDIES FOR CONSTIPATION-

1. Lemon juice –
   Before going to bed and after waking up, drinking a glass of water with half a lemon juice is a cleansing method to promote bowel movements. After drinking lemon water on a daily basis, you could notice that your teeth start to become sensitive, therefore you might wish to use a straw.
2. Olive oil–
   When taken on an empty stomach in the morning, a teaspoon of olive oil helps promote the passage of stool through the digestive tract. The oil facilitates the passage of solids through the digestive tract by acting as a lubricant. Additionally, it softens the faeces, which facilitates a full bowel movement.
3. Prune juice-
   One of the older methods of treating constipation. While prune juice has a higher sorbitol level than dried fruit, it lacks the fibre. Undigested, sorbitol enters the gut and pulls water in, which makes the stool thicker and encourages bowel movements.
4. Hot Beverages-
   While everyone appreciates a cup of tea or coffee as a way to recharge or feel refreshed, these beverages can also have a diuretic impact. Diuretics increase urine production, which means we have to go to the toilet more often than usual. When using coffee to promote bowel movements, have this in mind. In the same way that hot water aids in the breakdown of solids, so does tea and coffee. Due to its stimulating laxative properties that aid in the contraction of the digestive tract, senna tea is an especially suitable choice for relieving constipation.
5. Ginger-
   In many kitchens, this natural meal is popular. Because it eases the strain on the lower intestines, ginger aids in the treatment of constipation. Additionally, it can lessen other constipation-related symptoms like cramping, bloating, and nausea.
6. Fennel-
   A moderate and pleasant-smelling natural laxative. A delicious evening beverage can be made by mixing roasted fennel with warm water. Fennel seeds increase the digestive system's stomach enzymes, which facilitates the passage of faeces through the colon.
7. Clear soups-
   Stools are naturally moistened by clear soups, which can facilitate easier bowel motions and make stools softer. In general, the body can process warm foods like soups more easily[30].

HERBS THAT ARE USED TO TREAT CONSTIPATION-

1. Senna-The senna plant's fruit and leaves are used by some as a natural laxative. Online retailers offersenna in pill or liquid form. Senna works for around 8 hours. Senna works overnight, therefore some people decide to take it before bed. This frequently causes a morning bowel movement.
   For millennia, people have utilised senna, a natural ingredient, to temporarily alleviate constipation. Long-term use, however, might cause dependency and necessitate greater dosages to achieve the same results. Use for an extended period of time is not advised as it may cause lasting harm to the digestive system.
2. Kiwi fruit - Kiwifruit contains a lot of fibre.
3. Coffee - According to some research, hot drinks like coffee may promote bowel movements. Coffee has components that can increase the digestive tract's motility, which may aid people who are constipated[29].
4. Psyllium husk- This herbal remedy is rich in fibre, and the husks contain a good balance of both soluble and insoluble fibre. Practitioners of herbal medicine use it to treat both constipation and diarrhoea, but how can it treat both conditions? The plant acts as a bulking agent in the digestive tract, which means that it makes the stool bulkier as it passes through. It also has some intriguing properties that help lubricate the contents of the digestive tract, which makes it easier for the stool to pass through and out—a huge relief if you've been suffering from constipation. Additionally, psyllium husk softens the stool, which can be helpful if you have pain when attempting to poop.

5. Dandelion root- As we move past the bulking plants, we reach the fabled dandelion. We know better than to believe that dandelion is just a weed. It's almost comical to call dandelion a weed because of its numerous wonderful qualities. Dandelion leaves are rich in nutrients and aid with urinating. Conversely, dandelion root is an extremely bitter remedy. It facilitates the stimulation of the digestive system. Dandelion root can be quite helpful if your constipation is mostly caused by poor digestion. Some herbalists suggest producing a decoction by slowly boiling the roots in water, while others suggest using dandelion root as an alcohol-based tincture.
6. Yellow dock - Another plant that is commonly recognised as a weed is this one. Like dandelions, they have a lot to offer us. One of the best herbal remedies for skin conditions that could appear like a different subject is yellow dock. However, as you may already be aware, there is a close relationship between the skin and the intestines. An obstruction in one of your detox channels is the cause of your constipation problems. Your body recirculates the waste products and toxins that are often flushed away. This technique frequently results in poor skin.One of the classic signs of yellow dock, according to herbalists, is haemorrhoids. If you can obtain the root, you can make a herbal decoction with yellow dock, although it's usually taken as a liquid tincture[31].
7. Rhubarb-Despite being most commonly used as a pie ingredient, this vegetable can also be utilised to relieve constipation. Although rhubarb has a laxative impact. Rhubarb should therefore only be used temporarily to treat constipation.
8. Slippery elm - People have used this herb to treat constipation in the past. It relieves constipation by stimulating the gastrointestinal (GI) tract's nerves, which causes mucus to be produced. Long-term consequences have not been thoroughly studied. Mucilage, a sticky material found in slippery elm, coats the gastrointestinal tract. Therefore, if used concurrently, it may decrease the absorption of certain drugs[32].

X. DIAGNOSIS-

1. Anorectalmanometry –
   Anorectalmanometry (or ARM) is a diagnostic method that gauges the pressure activity of the anurectom, revealing the rectosphincteric reflex, rectal reflexes, rectal sensation, and rectal compliance during rest and bowel movements. A balloon at the tip of the tube and a pressure-sensitive catheter are helpful instruments for this procedure, which evaluates the neuromuscular and sensory function of the rectum and anus. Additionally, it aids in determining whether individuals with megarectum/megacolon have the recto-anal inhibitory reflex (RAIR). Therefore, manometry can be used to diagnose Hirschsprung disease, visceral neuropathy, and defecatory abnormalities (dyssynergia). Higher thresholds for the initial feeling and desire to defecate are provided by manometry, which allows it to assess anorectal sensory impairment. For persistent constipation, colonic motor dysfunction has also been assessed using high-resolution manometry (HRM) with closely spaced pressure sensors.
2. Balloon expulsion testing –
   Dyssynergic defecation is diagnosed using the balloon expulsion test (BET) and anorectal manometry. Additionally, BET has been utilised to detect pelvic floor dyssynergia or to rule out constipation in individuals without the condition. The duration of time required to empty a rectal balloon filled with 25 or 50 millilitres of water, air, or a silicone-filled stool-like device is measured. Between 23 and 67 percent of patients had impaired evacuation, according to several investigations; this evidence indicated that the BET results required further physiological explanations.
3. Barium enema-
   An X-ray technique called a bariumenemais is used to detect changes or anatomic anomalies in the colon tha
   filled with
   a metallic material (barium). However, the test is not suitable for diagnosing organic diseases or for clinical evaluation.

4. Defecography and magnetic resonance defecography (MRD)-

   Defecography is a known method of radiological imaging that displays the pelvic floor and anorectum. This test involves inserting barium into the rectum, and as the barium leaves the patient's body, images can be taken to evaluate the anorectal region's function. Moreover, 77% of cases have abnormalities on defecography. Therefore, there hasn't been any solid proof that anomalies and symptoms are related, and it would be ideal if these tests were limited. On top of that, little is known about its values in healthy persons. Defecography can therefore be utilised as an extra clinical and

manometric evaluation technique. Additionally, MRD is a non-invasive medical tool that shows the body structures and physiologicalprocesses related to anorectal illnesses. MRD may be beneficial from surgical operations like stapled transanal rectum resection and has been very helpful in defining anatomical problems such obstructed defecation syndrome. High soft tissue contrast, superb resolution, and little radiation exposure have been its defining characteristics. However, the lack of standardisation and exorbitant costs may limit its regular use.

5. Colonic transit study-

Patients may be given a pill with a radiopaque marker or a wireless recording device during this procedure. Over a few days, the capsule's journey through the colon will be monitored and captured on X-rays. The most common methods for measuring colon transit are radionuclide scintigraphy, wireless motility capsules (WMC), and radio opaque markers. The radio opaque marker test is the most often used method due to its simplicity and affordability, however radiation exposure is a drawback. Using a gamma camera and minimal radiation, scintigraphy can provide a means of physiologically evaluating gastrointestinal transit. The WMC is a non-radioactive test used to measure the transit time of the entire and regional gut.

Furthermore, WMC makes it possible to assess the temperature and pH of the gastrointestinal tract in a single, unmatched, and less intrusive way while eliminating many of the methodological challenges that could obstruct other approaches. Additionally, radio opaque marker and radionuclide scintigraphy have been mentioned as alternatives to WMC. Several test failure examples are displayed for a variety of causes, including the patient's incapacity to swallow the capsules, the capsule's incapacity to record or transmit data software issues, and the absence of a receiver for data capture or download. It has been shown to have a good specificity and usefulness in diagnosing lower gastrointestinal disorders and sluggish transit in constipated patients[19].

XI. LIFESTYLE MODIFICATIONS FOR CC-

Low hydration and fiber consumption is linked to CC. of the colon, dietary fibers retain water and provide the stools volume because they are not easily broken down by the enzymes of the small intestine. A higher fiber diet helps improve symptoms and shorten the transit time of the colon. The main adverse effects are flatulence and discomfort in the abdomen due to gas production.This is mostly seen with short fibers that dissolve in water. A modest increase in water consumption has little effect on colorectal function or lessens constipation symptoms unless the person is dehydrated. However, drinking two liters of water each day will increase the benefits of dietary fiber. λ Immobility is closely linked to constipation: Physical activity reduces colonic transit time in healthy persons by stimulating intestinal motility. Stool consistency is improved in people with chronic idiopathic constipation by engaging in moderate physical exercise for 30 to 60 minutes each day. It should be taken into consideration whether a different medication that is less likely to produce constipation can be used in individuals who are experiencing constipation due to drugs. λ Life quality and economic effects: A patient's quality of life is adversely affected by chronic constipation. Numerous studies document a decline in physical discomfort, mental health, and healthrelated quality of life. Every year, laxatives cost millions of dollars. Research shows that those who are constipated have worse physical, mental, and social functioning than those who are not. Strategies for constipation prevention programs can drastically lower the cost[33].

XII. CONCLUSION-

A frequent digestive condition that becomes more common during pregnancy for a variety of causes is constipation.It is least common during the first trimester and most common during the second. Certain laxatives may have negative effects on the foetus as well as the pregnant woman when medicine is needed to alleviate constipation. To lower the prevalence of constipation during pregnancy, further research is required to determine its causes and preventative measures. Additionally, it is imperative to put in place educational programmes that promote moderate physical activity and balanced diet throughout pregnancy[34].

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