Review Article

Evidence based drug therapy: management of constipation in children

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Definition

Constipation is characterised by infrequent bowel evacuations, hard small faeces, or difficult or painful defaecation[1]. Encopresis is defined as involuntary bowel movements in inappropriate places at least once a month for three months or more, in children aged 4 years or more[1].

Incidence / prevalence

It is common in children accounting for about 3% of consultations in an average paediatric practice and 25% of paediatric gastroenterology clinic consultations[1].

Aetiology

Constipation is usually idiopathic (90-95%) with a peak incidence between 2-4 years of age[1]. Psychosocial factors are often implicated although most children with constipation are developmentally normal. Chronic constipation can lead to progressive faecal retention, distention of rectum and loss of sensory and motor function of the bowel[1].

Organic causes of constipation are uncommon but should be considered, including Hirschprung disease (1/5000), cystic fibrosis, anorectal physiological abnormalities, anal fissures, constipating drugs, dehydrating metabolic condition, and other forms of malabsorption.

Children may withhold defaecation and this may make them liable to constipation. Risk factors for withholding include: fear of previous treatment for constipation or coercive potty training especially children between 2-3 years typically refusing to obey their parents, lack of privacy, domestic stress, sexual abuse, or pain on defaecation due to anal fissures or a perianal skin infection[2].

When the rectum is chronically obstructed, it causes megarectum, which may not sense the faecal matter in the rectum. This may lead to faecal soiling and should be differentiated from encopresis in which the child voluntarily passes normal stools in unacceptable places.

Treatment

Childhood constipation is often difficult to manage and often requires prolonged support, explanation, and medical treatment. The aim of management is to

- Remove any faecal impaction
- Establish a regular and effective pattern of defaecation in which stools are soft and passed without discomfort
- To prevent recurrence

What is the role of dietary intervention in the management of childhood constipation?

There is no direct evidence of benefit from increasing dietary fibre intake on colonic transit time or cure of constipation in children[1]

However, increasing dietary fluid and fibre intake can often relieve constipation[2]. If the child has a poor appetite, that has to be investigated, particularly if food is avoided because of discomfort after eating. Parents should be advised to be less anxious at meal times. Rearrangement of mealtimes may help where the child withholds defaecation at school. For example, eating breakfast earlier may enable the child to empty the bowels before going to school. Some infants who take large quantities of formula milk may benefit from a reduced intake but this should be supervised by paediatrician.

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What is the role of laxatives in treating constipation?

- Osmotic laxatives - the review found limited evidence that osmotic laxatives significantly increase stool frequency in infants resulting in normal stools[1].

- Stimulant laxatives frequently form part of standard treatment in comparative studies.

- No placebo-controlled trials of their effect in children were found[1].

If dietary changes are not sufficient to produce softer and more frequent stools, starting a laxative may help. If the child is old enough it is important to explain to the child why a laxative is given[2].

Treatment should start with regular doses of stool softener/osmotic laxative (e.g. lactulose) or a bulk forming laxative (e.g. ispaghula husk, methyl cellulose) to produce soft, easily passed stool. If these drugs do not work, a stimulant laxative (senna, bisacodyl) should be used. These laxatives stimulate colonic propulsion. Defaecation is therefore more frequent and the stools are smaller and softer. This gradually reduces the child's fear of the sensation of imminent defaecation. A combination of drugs (e.g. lactulose and senna) may be particularly effective and should be considered if individual drugs fail.

To help prevent recurrence of constipation, laxative treatment should be continued for several months. As defaecation becomes more regular with treatment, the effect of laxatives on frequency or urgency of defaecation gradually increases. The laxative dose can then be carefully reduced usually without symptomatic relapse.

One practical strategy is to advise parents to maintain the most effective dose of laxative until defaecation becomes too frequent and then to reduce the dose slowly over a few months.

What is the role of bowel evacuation?

Bowel evacuation may be necessary if a trial of laxatives fails, the colon is impacted, or the child experiences pain, nausea or vomiting, in addition to constipation. In the latter situation, suppositories or enemas or bowel cleansing solutions or manual removal under anaesthesia may be needed. Administration of suppositories and enemas may be difficult particularly if they have experienced anal pain or abuse. Sedation with temazepam or midazolam may allow enemas to be used without a lasting memory of distress.

Bowel cleansing solutions are powders made into a solution with water and then taken by mouth. Only certain ones are licensed for use in children. Preparations licensed for use in Sri Lanka include polyethelene glycol (e.g. Klean Prep, Movicol) and sodium dihydrogen phosphate dehydrate (e.g. Fleet).

Children may not easily tolerate these as it involves swallowing large volumes. The solutions are sometimes given via nasogastric tubes. They are known to cause distress, nausea and vomiting, colicky abdominal pain and fluid and electrolyte disturbances. Manual evacuation under a general anaesthetic may be the only option if all other treatments fail.

Ideally, such treatments as bowel cleansing solutions or manual evacuation under anaesthesia should only be attempted by a specialist.

What is meant by bio-feedback training?

Biofeedback training aims to treat abnormal defaecation dynamics which are considered to be the underlying problem in constipation[2]. Such training teaches muscle relaxation using anorectal monitoring instruments to amplify physiological processes and to make physiological information accessible to the patient's consciousness. This is expensive, labour intensive and requires specialized equipment and trained personnel.

- Randomized studies have suggested that adding bio-feedback training to conventional treatment in children with constipation helps improve the defaecation dynamics but without a consistent increase in clinical recovery rates[1].

When to refer?

Referral to a paediatrician is probably advisable if constipation is prolonged (more than 6 months); treatment in the general practice has not been effective and if the condition is interfering with the child's schooling and relationships.

Counselling and support in the management of constipation

Few children will discuss the problem of constipation. It is crucial, therefore that the child and family are offered counselling and support throughout management. The problems that need

addressing are parental distress, low self esteem of the child due to embarrassment and teasing and poor adherence to toileting routine and medication.

Psychological therapy should be started gently with simple reassurance and simple counselling and then increased to the need and the availability of resources. If there are other behavioural difficulties such as temper tantrums, sleep disorders or hyperactivity, referral for psychological help may be most effective. A wide range of incentive charts can be used to reward adherence to toileting routine, taking medicines and successful defaecation.

Conclusions

Key indications for treating are pain on defaecation, severe straining or overflow incontinence and soiling. Simple parental advice on dietary habits, sensible use of laxatives, combination of drugs where necessary are sufficient to manage the mild forms. A child presenting with more severe symptoms and/or psychosocial problems may need further treatment, which requires involvement of a skilled team of doctors, nurses, social workers, psychologists, working together with the child, the parents and teachers.

Adding biofeedback training to the use of laxatives, counselling and toilet training does not seem to increase the chances of long term recovery from chronic constipation and soiling.

References

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