11
Conservative Management of Anal Incontinence

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11.1 Background

Anal incontinence (AI) may be defined as any involuntary loss of stool or gas via the anus.[1] Specifically, faecal incontinence (FI) is loss of stool, whether liquid or solid.

Anal incontinence is an under-reported symptom.[2,3] There are many possible reasons for this, including lack of awareness among health professionals and patient embarrassment. For some, symptoms may not be bothersome enough to seek help. Other women may assume that symptoms will resolve with time, or that AI is an inevitable consequence of childbearing, or be so busy with the demands of a new baby that there is little time to concentrate on her own health. Whatever the reason, there can be little doubt that this is a difficult symptom to talk about, therefore necessitating active case-finding by health professionals who will increase awareness that help is available.

It must always be remembered that factors other than anal sphincter trauma may contribute to symptoms of AI. It is often a combination of anal sphincter damage and another bowel problem that precipitates frank incontinence. Other disorders such as haemorrhoids, irritable bowel syndrome and inflammatory bowel disease need to be considered and managed appropriately. This variety of possibilities makes comprehensive assessment crucial to identifying all elements of an often multifactorial symptom.[4] Assessment will include detailed consideration of symptoms, medical history, medications, psychosocial factors, diet, lifestyle and the impact of symptoms on the patient and her desire for interventions.

This chapter will cover conservative and pharmacological options for women with anal incontinence. The next chapter will explore surgical options. These are not mutually exclusive interventions, and many of the options discussed here can be combined with surgery. For many patients surgical options are either not appropriate, or not totally successful. Expert opinion agrees that conservative management is appropriate for almost all patients exhibiting the first signs of anal incontinence.[1] Figure 11.1 gives an algorithm for decision-making based on an international consensus. However, the evidence base for this pathway and most interventions is extremely sparse. Unfortunately, much advice given to patients is based on clinical experience rather than good quality research. Instead, the treatment (if treated at all) offered to a patient will often depend on local expertise and availability.

11.2 "Lifestyle" Interventions

11.2.1 Body Mass Index

There is an association between obesity and FI.[5] This could be a directly causative association via increased pressure or impaired blood flow, or could be mediated via a general lack of health awareness, lack of exercise and muscle tone and poorer diet in the obese patient. It is not known whether weight reduction has a role in treating symptoms in women following perineal trauma. If weight loss does help, it is not clear if this is a direct effect, or the effect of a change in diet and

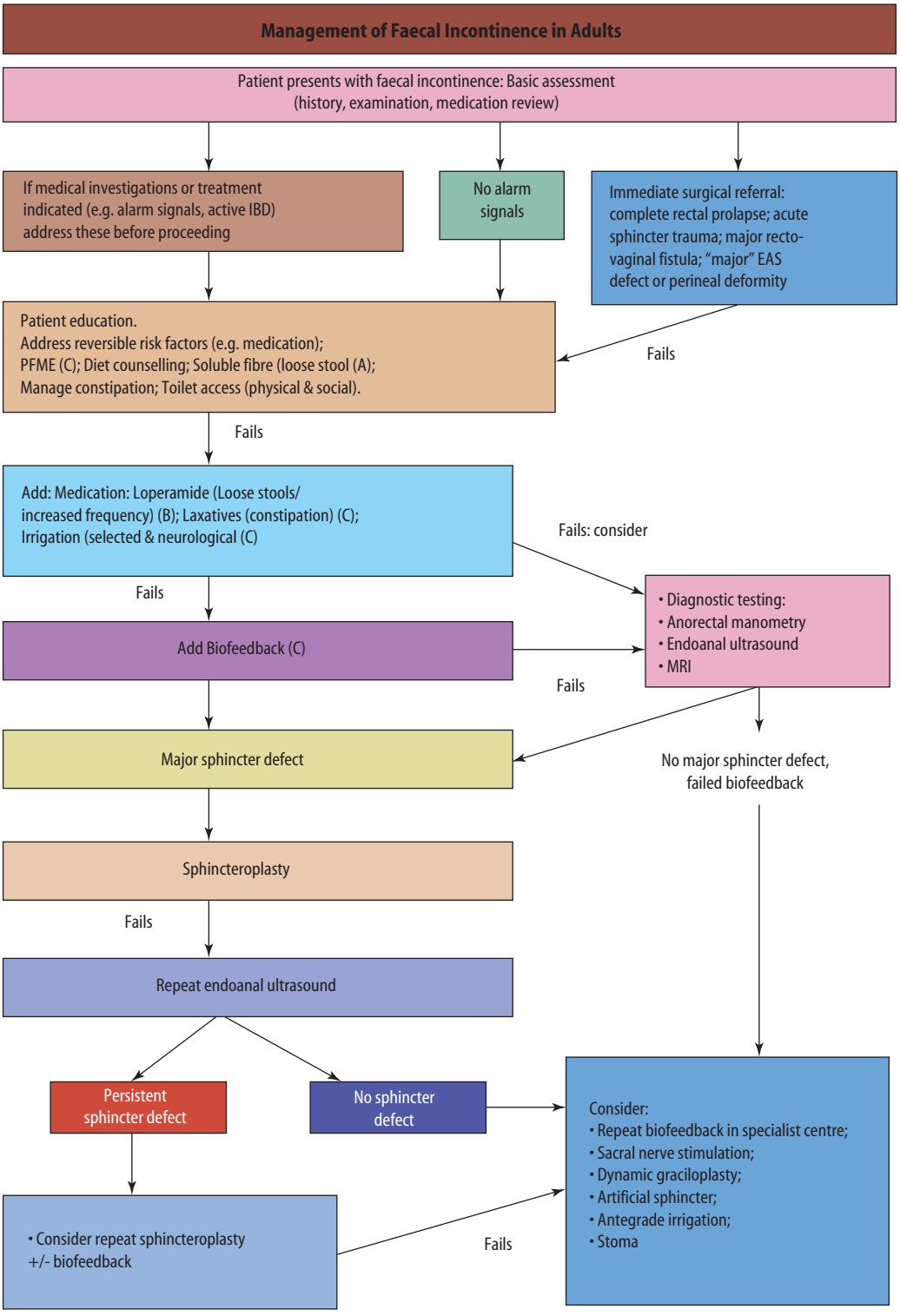

Figure 11.1. Management of faecal incontinence in adults.[1]

general fitness that is usually associated with weight reduction. It is not known if women who regain their normal body mass index most rapidly following childbirth are less prone to symptoms of AI, or if those who have a permanent weight increase following childbirth are at higher risk of AI. Some modern diets promoted for weight loss, such as low carbohydrate diets, have a known constipating effect and any effect on AI may simply be the result of constipation.

11.2.2 Smoking

Nicotine is a known distal colonic stimulant[6] and smoking a cigarette anecdotally promotes the urge to defaecate in some individuals. No association has been found between antenatal smoking and postnatal FI[7] and no study has assessed the role of smoking or smoking cessation in patients with AI or bowel urgency.

11.2.3 Physical Exercise and Work

There have been no studies on the impact of physical exercise on FI or bowel habit in non-institutionalised adults. The epidemiological literature is consistent in showing less constipation in people who report that they exercise. It is known that endurance running is associated with diarrhoea and FI in over 10% of individuals,[8] but there are no studies on treatment.

Excessive exercise may also be a factor in rectal prolapse. This is seen in young women with anorexia nervosa who combine excessive exercise with extreme nutritional impairment, presumably thus compromising tissue quality. Women whose jobs involve a lot of heavy lifting are more likely to need vaginal prolapse surgery than the general population (odds ratio [OR] = 1.6),[9] but it is not known if this is also true of FI.

11.3 Patient Education

Most people have little notion of how the bowel works and how to control its function. From the time of acquisition of continence, control usually functions at a subconscious, albeit voluntary, level.[10] This means that if an injury is sustained and control is impaired, it can be difficult to regain as there is little conscious awareness of how control was previously maintained.

There is some evidence that patient education may be helpful for AI. Simple explanations and diagrams can be used to teach people about normal and disordered function[11] (www.bowel-control.org.uk; www.iffgd.org). One study has found that patient education, when combined with simple strategies such as modifying diet and urge resistance (see below) is as effective as performing pelvic muscle exercise or biofeedback.[12] Other support for the benefits of patient education comes from a study[13] showing that education and standard medical care, when provided systematically to a group of FI patients who had failed prior attempts at medical management, led to a successful outcome in 38%. Success in this trial was defined as a patient's report that they had experienced adequate relief of bowel symptoms.

Emotional support is an important element of this education. Patients with AI tend to feel very isolated, and because people seldom discuss bowel symptoms there is a tendency for each patient to feel that she is the only one.[10,14] Simply giving the opportunity to talk and express feelings seems to be therapeutic for some.

11.4 Bowel Routines

Expert opinion supports the importance of attempting to establish a regular predictable pattern of bowel evacuation by patient teaching and adherence to a routine.[15,16] Because peristaltic contractions of the colon that are associated with defaecation increase in frequency following awakening from sleep and following meals,[17,18] the period after breakfast is the best time for scheduled defaecation, but no studies have evaluated the effectiveness of this in adults.

11.5 Diet and Fluids

Modifying the diet will often have a direct effect on bowel function, stool consistency and motility. It is known that fibre softens stool, increases stool weight and speeds transit, particularly in the

colon. Fibre retains intralumenal fluid and can also form a matrix binding together otherwise loose stool.

Many patients with both urge and passive FI find that they have more incontinent episodes when the stool is loose. Firmer stool seems to leak less and it may be easier to achieve complete evacuation when stool is formed. Fibre seems to act in different ways for different patients. Some derive clinical benefit from moderating the fibre content of diet, particularly restricting unrefined cereal fibres such as bran and wholewheat.[11] One small randomised controlled trial (RCT) has found less FI in patients who add fibre supplements to their diet, with gum Arabic and psyllium both improving FI when compared to placebo.[19] Other patients find that particular foods cause a problem and are best avoided, but there is no way to discover which foods have an effect other than trial and error. It does not seem that people with FI have a different diet from other people,[20] but rather that those prone to FI are less able to cope with some foodstuffs.

Inability to digest cows' milk products because of lactase deficiency is common, particularly in non-Caucasian populations. In the large intestine, fermentation of lactose by colonic bacteria typically results in flatulence, distension, diarrhoea and cramps. However, the majority of adults who have lactase deficiency can tolerate a small amount of lactose in foods.[21] Due to its prevalence in approximately 25% of the population, lactose maldigestion is currently regarded as a normal physiological pattern rather than a disease.[22] It occurs in 6–19% of whites, 53% of Mexican Americans, 62–100% of native Americans, 80% of African Americans and 90% of Asian Americans.[22,23] If the patient suspects that milk worsens symptoms, a dairy-free diet for 2 weeks can be tried, but care needs to be taken to avoid all milk products, including milk solids, which are often used in commercially prepared foods.

Malabsorption of fructose and sorbitol results in osmotic diarrhoea and adverse symptoms, similar to lactose intolerance. A diet reduced in fructose and sorbitol content is suggested for some patients with irritable bowel syndrome to reduce adverse gastrointestinal symptoms[24] and may help patients with urgency and flatulence associated with loose stool. Artificial sweeteners in low calorie drinks or chewing gum and diabetic foods are often found to worsen symptoms.[11]

Caffeine is known to stimulate colonic motility[25] and can increase urgency in susceptible individuals. This can be useful to enable evacuation at a chosen time, such as before leaving the house in the morning, but some patients find that restricting the amount or timing of caffeine is useful.[26] Coffee, tea and colas, especially when combined with artificial sweeteners, may all worsen symptoms. Excessive alcohol can also lead to loose stool.

Some foods seem to promote flatus production or an offensive odour from flatus for some people. Common culprits are onions, spicy food, excessive alcohol, brassicas and other green vegetables, beans and pulses. Although there is no way to stop flatus production completely, being careful with some foods may help, but this seems to be very individual.

There is increasing interest in the potential of probiotics to influence gut flora and health. In patients with inflammatory bowel disease, ingesting these "beneficial bacteria" has been found to restrict relapse and reduce symptoms. However, as yet there are no reports in people with AI or FI.

11.6 Anal Sphincter Exercises

There have been surprisingly few studies of exercises as a sole treatment for faecal incontinence. Almost all protocols that have included exercises (variations of pelvic floor muscle training, but more usually referred to as anal sphincter exercises) have been in combination with biofeedback (see below). One study in women recruited because of postnatal urinary incontinence has found that women performing pelvic muscle training had less FI at 1 year than controls who did not exercise (4% vs 10%).[27] However, the focus of this study was not on FI and this result was an incidental finding. Also, the results do not persist in the long term.[28] Another small study found that women who did exercises after a repaired third degree tear had minimal symptoms of AI (7%) and increased ability to hold a voluntary squeeze at 1 year,[29] suggesting that there may be a preventive value.

There is no research or consensus on what might be the optimum exercise regimen to enhance external anal sphincter strength. As with urinary incontinence, vastly different protocols have been suggested (with between five and several hundred squeezes per day), with the mode around 50. Some have recommended, in addition to maximal contractions, sub-maximal and fast-twitch contractions[30] (Figure 11.2). It is unclear whether the aim of exercises should be to enhance strength, speed of reaction or endurance of contraction, or if improving any of these necessarily improves symptoms. It has been suggested that fatigue rate is more important than absolute strength,[31] but this observation has yet to be validated.

Some groups have suggested that the addition of electrical stimulation as an external skin electrode or via an anal plug will enhance the effect of exercises alone. There are several case series reported, but the evidence base from RCTs for the efficacy of this does not exist at present.[32] One randomised study in women with obstetric-related FI did find better results with electrical

Patient instructions for anal sphincter exercises

Sit comfortably with your knees slightly apart. Now imagine that you are trying to stop yourself passing wind from the bowel. To do this you must squeeze the muscle around the back passage. Try squeezing and lifting that muscle as tightly as you can, as if you are really worried that you are about to leak. You should be able to feel the muscle move. Your buttocks, tummy and legs should not move much at all. You should be aware of the skin around the back passage tightening and being pulled up and away from your chair. Some people find it helpful to imagine that they are trying to pick up a penny from the chair with their anal sphincter muscles. You are now exercising your anal sphincter. You should not need to hold your breath when you tighten the muscles!

Now imagine that the sphincter muscle is a lift. When you squeeze as tightly as you can your lift goes up to the 4th floor. But you cannot hold it there for very long, and it will not get you safely to the toilet, as it will get tired very quickly. So now squeeze more gently, take your lift only up to the 2nd floor. Feel how much longer you can hold it than at the maximum squeeze.

Practising your exercises

1. Sit, stand or lie with your knees slightly apart. Tighten and pull up the sphincter muscles as tightly as you can. Hold tightened for at least (5) seconds, and then relax for at least 10 seconds to allow the muscle to recover.

Repeat at least (5) times. This will work on the strength of your muscles.

2. Next, pull the muscles up to about half of their maximum squeeze. See how long you can hold this for. Then relax for at least 10 seconds.

Repeat at least (5) times. This will work on the endurance, or staying power, of your muscles.

3. Pull up the muscles as quickly and tightly as you can and then relax and then pull up again, and see how many times you can do this before you get tired. Try for at least (5) quick pull-ups.

4. Do these exercises – (5) as hard as you can, (5) as long as you can and as many quick pull-ups as you can – at least (10) times every day.

5. As the muscles get stronger, you will find that you can hold for longer than 5 seconds, and that you can do more pull-ups each time without the muscle getting tired.

6. It takes time for exercise to make muscle stronger. You may need to exercise regularly for several months before the muscles gain their full strength.

FIGURE 11.2. Patient instructions for anal sphincter exercises. Note: length of squeeze and number of repetitions is individualised (figures in brackets), depending on what is achieved at the initial assessment.

stimulation than exercises and biofeedback alone, but the results were compounded by different methods and therapists for the two groups.[33] In another study, randomising women to exercise or exercises plus anal electrical stimulation following repair of a third degree tear, the stimulation was abandoned because of reported discomfort.[34] This was possibly because stimulation was commenced too soon after delivery.

If there is a clinical effect from electrical stimulation, it is unclear whether this is via direct muscle strengthening, or via sensitisation of the anal area, enabling better recognition of rectal contents or enhanced ability to perform exercises. One study has compared anal stimulation at 35 Hz, which should produce a tonic muscle contraction, with stimulation at 1 Hz, which produces sensation but no contraction: no difference in outcome was found after 8 weeks of stimulation, with two-thirds of patients completing the protocol finding that FI improved to at least some extent.[35]

11.7 Resisting Urgency

In contrast to urinary incontinence, where a body of knowledge has developed on the efficacy of bladder training techniques, particularly in relation to the overactive bladder syndrome, the possibility of bowel retraining for resisting urgency to defaecate is almost unexplored. Some biofeedback protocols focus on altering rectal sensory thresholds (see below). One RCT compared patients who received education, including urge resistance techniques, and dietary advice, to a group of patients who received the same training plus anal sphincter exercises with or without home or clinic biofeedback. There were no significant difference in outcomes.[12] However, this study did not assess the effectiveness of the behavioural training compared to an appropriate control group.

11.8 Biofeedback

"Biofeedback" has dominated the colorectal literature as the first-line conservative intervention for FI in adults. However, "biofeedback" is a term that has been applied to many different interventions, and some groups have not described the intervention at all. Three broad approaches may be distinguished:

1. Use of anal pressure or electromyography feedback to teach the patient voluntarily to contract the anal sphincter and then utilising feedback to monitor and enhance the performance of anal sphincter exercises.
2. Use of a rectal distension balloon to "train" the patient to lower the threshold of sensation of rectal contents. A rectal balloon is inflated until the patient can feel it: it is then deflated and subsequent inflations are at progressively lower volumes. The rationale is that the sooner rectal contents are felt, the sooner the appropriate action of contraction of the anal sphincter can be made to avoid FI occurring.
3. Coordination training. This is usually performed with a three-balloon system, allowing simultaneous rectal distension and monitoring of anal pressures. Protocols often involve showing the patient the normal rectoanal inhibitory reflex consequent upon rectal distension and "teaching" the patient to counteract this fall in anal pressure with a voluntary anal squeeze.

Within these three broad categories, there has been huge variation in terms of frequency and length of sessions, instructions given to patients, and practice expected between sessions. The three modalities have also been combined with each other, and with a variety of the other interventions mentioned in this chapter[30] (Table 11.1).

From the first report of biofeedback in the early 1970s, there have been numerous case series published with positive outcomes, usually in well over a half of all patients treated.[1,36,37] As with any other

Table 11.1. Possible elements of a biofeedback programme.[30]

Diary and symptom questionnaire
Structured assessment
Patient teaching
Emotional support
Lifestyle modifications
Management of faecal incontinence
Urge resistance programme
Anal sphincter exercises
Clinic computer biofeedback
Home biofeedback unit

intervention, positive case reports do not constitute evidence that the treatment is effective, as there is a widely recognised and large placebo response to intervening per se in patients with functional gut disorders.[38] Evidence from a few RCTs is equivocal about the benefit of biofeedback.[39] Different modes of biofeedback seem to yield similar results.[40] Patient education and/or exercises may be as effective as adding biofeedback to either.[12,41] As a way of structuring a consultation and delivering patient education, biofeedback seems to be clinically useful: there must be some doubt on current evidence as to whether giving patients direct feedback is crucial or adds anything over and above a well-structured and individually tailored advice package.[1]

11.9 Drug Management

There have been very few good quality studies of drug treatment for FI.[42]

11.9.1 Modifying Existing Medication

A large number of prescription and over-the-counter medications can affect bowel function, either increasing constipation or loosening the stool. These are far too numerous to mention here, but it is important that all patients with AI have their medications reviewed in detail and any modifications made if possible.

11.9.2 Diarrhoea and Constipating Agents

There is a reported association between loose stools and FI.[43,44] This is consistent with reports that FI is more prevalent in patients with irritable bowel syndrome,[45] in those with illnesses that produce diarrhoea,[46–48] and in people who run long distances for exercise.[49]

If AI is secondary to soft or loose stool, using medication to firm or bulk the stool is often recommended. Loperamide is usually the drug of first choice as it has multiple potentially beneficial effects and seems to have minimal side-effects in most people. It increases colonic water reabsorption, dampens the gastrocolic response and colonic motility, and raises resting tone in the anal sphincter.[50,51] It can routinely be used in doses up to 16 mg per day and clinical reports suggest that even higher doses are safe in chronic diarrhoea. Patients who find that even low doses result in unacceptable constipation may find the liquid formulation easier to titrate to achieve the desired response. Other constipating agents such as codeine phosphate and anticholinergics are also used clinically, although there are no studies on efficacy and side-effects may be troublesome.

11.9.3 Laxatives and Evacuants

Patients with FI secondary to rectal loading or incomplete evacuation may use an oral or rectal laxative in an attempt to produce more effective emptying. While this approach is well established in encopretic children,[52] evidence in adults is lacking except in a nursing home population.[53] Some patients with FI that is difficult to regulate may choose artificially to constipate themselves and then use a suppository or micro-enema to evacuate at a chosen time. While not ideal, many find this preferable to uncontrolled incontinence. Suppositories may be useful in achieving complete evacuation in those patients with post-defaecation soiling.

11.9.4 Sphincter-modifying Drugs

As with urinary incontinence, there has recently been interest in attempting to modify the function of the anal sphincters pharmacologically. Alpha-adrenergic agonists have been found to raise the resting anal sphincter pressure in normal volunteers by up to 30% for up to 8 hours by using a topical formulation of phenylephrine.[54] This translates into a clinical benefit for patients with anal leakage secondary to ileoanal pouch formation, especially improving symptoms of nocturnal leakage.[55] However, it seems to be less effective in patients with impaired sphincter function:[56] presumably the pouch patients who benefit have essentially normal sphincters and leakage is secondary to liquid stool or altered sensation rather than internal sphincter dysfunction. Newer preparations and different compounds are under investigation but none has reached the commercial market to date.

11.10 Living with Anal Incontinence

11.10.1 Products

There are very few products designed specifically for managing FI. Generally, the same absorbent products are used as for urinary incontinence, but with limited ability to disguise the smell or protect the skin following an episode of FI. Many patients report that pads or diapers are very unsatisfactory. For minor leakage the pad is in the wrong place and it is difficult to secure a product between the buttocks where it is needed. For more major FI, particularly if the stool is diarrhoea, no pad will reliably control the incontinence.

An anal plug has been designed to control FI. This is useful for a minority of patients, particularly those with limited sensation. The majority cannot tolerate the plug because of discomfort or because it stimulates the desire to defaecate.[57,58]

11.10.2 Skin Care

Most people with FI do not report problems with anal skin soreness, as long as they are able to deal with episodes promptly. When FI is combined with urinary incontinence, there is an increased propensity for soreness. There is no evidence on the best approach to managing sore skin, but clinically many baby care and stoma care barrier creams are helpful, as is meticulous personal hygiene.

11.11 Prevention of Anal Incontinence

There has been almost no research on conservative options for preventing symptoms of anal incontinence after childbirth. One option is pelvic muscle exercises before or after delivery. These are often recommended by obstetricians and midwives and promoted in antenatal and postnatal education. However, no published study has evaluated the efficacy of this advice on subsequent anal symptoms.

In a small number of studies, pelvic floor muscle training and education have been evaluated as a secondary prevention strategy for those at high risk of incontinence. Glazener and colleagues[27] compared nurse assessment plus reinforcement of pelvic floor muscle training and bladder training to standard management (no specific intervention) in 747 women with urinary incontinence 3 months following delivery. FI was present as a comorbid condition at baseline in 57/371 in the active treatment group and in 54/376 in the standard management group. At follow-up (12 months after delivery) the prevalence of FI was significantly lower in the active intervention group compared to the control group (4.4% vs 10.5%, $P = 0.012$). This suggests that exercises may have a role in reducing FI, but the primary focus of this study was urinary incontinence and FI seems to have been measured by a single question only as present or absent. Other studies have suggested no benefit for the treatment of early-onset FI after delivery with pelvic floor exercises: Meyer and colleagues[59] performed a prospective RCT in which half of 107 primiparous women received 12 weeks of pelvic floor exercises with biofeedback and electrical stimulation beginning 9 weeks after delivery; the other half received "routine care" (no specific intervention). Assessment was at 10 months after delivery. The incidence of FI was low in this study (4–5%) and was not significantly different in the group receiving biofeedback. Two other studies whose primary aim was to treat urinary incontinence with pelvic floor exercises and education, reported that these exercises did not reduce the incidence of new FI relative to the control group.[60,61]

A postal survey carried out in 7,879 women who delivered during the same year at three hospitals – one in England, one in Scotland, and another in New Zealand – showed a higher incidence of FI in Asian women than in Caucasians (OR = 3.2).[62] A higher incidence of obstetrical injury in Asian as compared to Caucasian women was reported in two other surveys.[63,64] The prevalence of obstetrical tears during spontaneous vaginal delivery was also greater in Hispanic subjects and Filipinos.

Age is a known risk factor for FI.[1] Some of the age-related increase in prevalence of FI may be attributable to age-related declines in general health, muscle strength, mobility, and the increased prevalence of other diseases that may contribute to FI. However, it is not known if older

women are more likely to develop subsequent AI following childbirth. If there is an association, this could enable targeting preventive interventions to the higher-risk groups such as older mothers and certain races. It is not known whether weight reduction has a role in preventing symptom development following perineal trauma. It is not known if avoidance of heavy lifting would prevent AI development in an at-risk population.

11.12 Conclusions

Anal or faecal incontinence is a difficult and demoralising problem for many women following anal sphincter trauma. Even if symptoms are relatively rare, the fear or uncertainty of their occurrence can lead to anxiety and even isolation. There have been remarkably few intervention or prevention studies. Clinically, it is often a combination of measures that improves symptoms, rather than a single intervention. As public awareness of the problem grows, it is to be hoped that more women will summon the courage to report symptoms and more health professionals will take an interest in finding solutions.

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