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# Management of Urinary Incontinence and Alvi Incontinence in the COVID-19 Pandemic Era

**I Gde Sastra Winata[1], I Putu Rian Cipta Pramana Putra[2]**

[1, 2]Obstetric and Gynecology Department, Faculty of Medicine Udayana University, Sanglah Hospital, Bali-Indonesia

**Abstract:** ***Urinary incontinence and alvi incontinence are complications that occur in women due to pelvic floor disorders. There are various etiologies of urinary incontinence and alvi. Childbirth, pelvic floor surgery, and menopause are some of the things that cause urinary incontinence. Nerve damage and vaginal delivery can cause fecal incontinence. There are quite effective treatment options available including conservative and surgical options. The important thing to remember is that incontinence is not a normal part of the aging process.***

**Keywords:** Urinary incontinence, alvi incontinence, COVID-19

## 1. Urinary Incontinence

Based on the ICS (International Continence Society) agreement in 1996, urinary incontinence is the inability to control urine discharge, which is seen directly and causes social and hygiene impacts for sufferers.[1,2]

Urinary incontinence is classified as stress or pressure type urinary incontinence, urgency or pressure type urinary incontinence and mixed or mixed urinary incontinence.[1,2]

Handling of urinary continuation can be done with two approaches, namely conservative and operative. The selection of treatment method is carried out by considering several factors such as patient discomfort and its effect on work, family, social life, general condition of the patient, urodynamic examination and the degree of decrease in bladder neck and the amount of urine that can be measured objectively.[1,2] Initial treatment at IU pressure, pressure or mixture includes suggestions for improving lifestyle, physical therapy, scheduling urination, behavioral therapy, medication / medication, or a combination.[3]

## 2. Conservative

Lifestyle improvements include weight loss in obesity. Reducing caffeine intake can improve frequency and urgency symptoms but not improve IU. It is important to assess the type and amount of fluid intake for IU patients and smoking patients should be recommended to stop.[1,2]

Physical therapy includes pelvic floor exercises, which are conservative first-line therapy for pressure, pressure, or mixed IU and in women three months postpartum with persistent IU symptoms and can be recommended for postnatal and elderly women. Exercises using vaginal cones can be combined with pelvic floor muscle exercises for IU pressure.[2,3]

The use of biofeedback in patients with UI pressure (stress urinary incontinence) gives better results in patients who get pelvic floor muscle training.8 Electrical stimulation with surface electrodes (skin, vagina, anus) is not recommended as a single treatment at IU pressure. Electrical stimulation has the same effectiveness for mixed IU therapy and pressure IU. Electromagnetic stimulation has been proposed for the treatment of IU, but scientific evidence for short and long term effects is quite weak.[3,4]

Bladder training, is the first-line therapy for IU pressure and mixture. Urinary schedule for patients with cognitive impairment. If possible, offer percutaneous posterior tibial nerve stimulation for IU pressure if antimuscarinic drugs do not work. Whereas in mixed IU cases, handle the most disturbing symptoms first.[3,4]

Medical therapy includes medications such as antimuscarinic that works by blocking muscarinic receptors in the bladder detrusor muscle. If antimuscarinic treatment is ineffective, then the dose can be increased or offered another antimuscarinic, or mirabegron, or combination. The effectiveness and side effects of the drug must be evaluated as early as possible in IU patients urged by antimuscarinic therapy. Long-term antimuscarinic use in the elderly must be given with caution, especially in patients who have or are at risk of cognitive dysfunction. Solifenacin and fesoterodine have been shown not to cause cognitive impairment in elderly patients in short-term studies.[4,5]

Other medical therapy is by giving β3-agonists such as mirabegron which works by stimulating β3 receptors in the bladder's detrusor smooth muscle causing relaxation of the muscle. Mirabegron has been shown to have efficacy and safety in elderly patients. Topical vaginal estrogen administration is recommended in postmenopausal patients with vulvo-vaginal atrophy. Provision of systemic estrogen in worsening IU patients needs to be discussed for alternative treatments for hormone replacement therapy.[4,5]

Desmopressin is an analog of vassopressin (an antidiuretic hormone), which works to reduce the amount of water that comes out of the urine. Desmopressin is given to patients with nocturnal enuresis.16 Duloxetine is also used. This drug works by inhibiting the re-uptake of serotonin (5-HT) and norepinephrine, which results in increased tone and strength of contraction of the external urethral sphincter. The efficacy

of duloxetine at IU pressure is low and can have significant side effects, such as nausea, vomiting, dry mouth, constipation, headache, insomnia, somnolence and fatigue. Duloxetine can only be offered to patients with IU under certain pressure, if the surgical procedure is not indicative and must be combined with pelvic floor exercises.[6]

Further treatment, such as invasive therapy is needed in patients who experience failure at initial treatment and experience a decrease in quality of life. Urodynamic examination to diagnose type IU is highly recommended before invasive procedure.[2,4]

The novel coronavirus (COVID-19) pandemic has drastically changed how patients are evaluated and treated and how they access ambulatory health care.In this pandemic era, conservative treatment for urinary incontinence is the same. The usage of telemedicine can limit community exposure to the most vulnerable population while simultaneously granting patients the opportunity to establish or continue care with a provider.[7,8]

Women with urinary incontinence should initially be managed by remote communication (virtual consultation) Facilities for remote communication can vary and include telephone/ video conferencing. If possible, it may be useful to obtain the history prior to the hospital visit using a structured general history questionnaire with validated condition specific questionnaires returned via secure email access or Electronic Personal Assessment Questionnaires such as EPAQ-Pelvic Floor.[7,8]

Non-computer literate patients can be asked questions over the phone or sent the documents in the post with a return addressed stamped envelop. Bladder diary could be sent to the patient before consultation (available in 12 languages). A relevant clinical history should be taken to elucidate the type and severity of the symptoms. Categorise the woman's urinary incontinence as stress urinary incontinence, mixed urinary incontinence or urgency urinary incontinence/ overactive bladder. Start initial treatment on this basis. In mixed urinary incontinence, direct treatment towards the predominant symptom. Exclude symptoms of urinary tract infection (If suspected, follow UTI guidance below). Women should be referred to secondary care for further management in presence of visible hematuria, persistent bladder or urethral pain, suspected fistula, previous continence surgery with pain and/or recurrent UTI Urinary retention/ voiding difficulty. Explain that in keeping with current practice, conservative management will be offered first. Further investigations and surgical management will take place after services return to normal. Maintain an electronic/paper copy of the remote assessment for future reference.[7,8]

Try and limit calorie intake and take daily exercise during the Covid 19 lockdown should be advised. Pelvic floor muscle training of at least 3 months' duration should be offered as firstline treatment to women with stress or mixed urinary incontinence. Offer bladder training lasting for a minimum of 6 weeks as first-line treatment to women with urgency or mixed urinary incontinence.[7,8]

Offer a further virtual review if a medicine for overactive bladder or urinary incontinence stops working after an initial successful 4-week telemedicine review. Offer a review to women who remain on long-term medicine for overactive bladder or urinary incontinence every 12 months, or every 6 months if they are aged over 75; this can be accomplished with telemedicine. Refer women who have tried taking medicine for overactive bladder, but for whom it has not been successful or tolerated, to secondary care to consider further treatment. Explain that this may be delayed.[7,8]

**Surgery**

Surgery as an IU therapy is usually considered an option after failure on conservative therapy or medical therapy. The goal of all IU operations is continence.[2]

Sling miduretra provides tension-free support to miduretra using slings. Recent evidence shows that the retropubic use of the miduretral sling technique provides a cure rate comparable to colposuspension in pressure type IU therapy over a long period of time. An adjustable synthetic miduretra sling may be effective for improving IU pressure conditions in women. No evidence was found that the adjustable slings were better than conventional slings. However, the duration of surgery, the incidence of bleeding and postoperative pain from a single-incision sling are shorter than conventional slings. Bleeding The risk of failure from surgical IU pressure, or an unwanted event, appears to increase with higher patient age. There is no evidence that there is a surgical procedure with better efficacy and safety for women with advanced age than other procedures. Incontinence surgery may be performed for women with obesity, but with results that will be more inferior. In patients who receive surgical management for pressure IU, coital incontinence will improve. In general, sexual function will not be interrupted by IU surgical pressure.[1,9,10]

Colposuspension is the gold standard of surgical intervention for uncomplicated pressure IU. Options for open surgery include open colposuspension, fascial autologous slings, and laparoscopic colposuspension. A fascial autologous sling is more effective than colposuspension for curing IU pressure in women but with a higher risk of surgical complications. Colposuspension has a long-term risk of POP compared to sling for miduretra. Laparoscopic colposuspension has a lower risk of complications and length of stay compared to open colposuspension.[1,11]

Other therapies with the procedure are bulking agents in the form of an intra or periurethral injection that can compress itself under the submucosal layer or around the urethra, and then form an artificial cushion that will increase resistance to urine flow and facilitate continuity. This therapy option can be used in women who have had surgery but have not yet received results.[2,10]

The management of the new urging IU will follow the recommendations of the primary IU management starting with conservative therapy. There are 3 procedural procedures that are FDA-approved for women with symptoms of persistent urge incontinence or intolerance therapy. The therapy uses intravesical injection of botulinum

toxin A, sacral neuromodulation and tibial percutaneous nerve stimulation.[1,4,11]

For surgery treatment in pandemic era, we should wear 3rd level of self-protection equipment during surgery. Patients whose postoperative visits are conducted using telemedicine reported high levels of satisfaction and experienced no increase in adverse events, emergency room visits, or primary care visits. Postoperative patients after midurethral slings with no symptoms of incontinence or after native tissue pelvic organ prolapse repairs can be appropriately assessed with telephone follow-up.[7,12,13]

Some women may have had surgery prior to the crisis and may have their face to face appointments cancelled or postponed. Follow-up appointments can be carried out remotely using telephone or video conferencing. A randomized trial has shown that postoperative phone visits are not inferior to in-person visits in terms of patient satisfaction, complications and adverse events. If a reason to see patient is identified, a face-to-face appointment may be the only option. If so, recommended PPE should be worn.[12,13]

**Alvi Incontinence**

Alvi incontinence or faecal incontinence is defined as the inability of a person to hold and excrete feces at the right time and place. The goal of therapy for sufferers with fecal incontinence is to restore continence and to improve quality of life. Alvi incontinence management can be classified as conservative and surgical or operative.[14]

**Conservative**

Conservative treatment in the form of supportive efforts such as avoiding irritative food, getting used to defecating at certain times, improving skin hygiene, and making lifestyle changes can be beneficial in the management of fecal incontinence. Other supportive efforts include dietary modifications, for example reducing caffeine or fiber intake. Caffeine-containing coffee increases the gastro-colonic response and increases colonic motility, and induces fluid secretion in the small intestine. Exercise can increase motor activity and colonic transit. A food diary and symptoms can identify dietary factors that cause liquid stools and incontinence, in particular, lactose or fructose malabsorption. Eliminating these foods has proven to be beneficial.[14,15]

Pharmacological therapy in the form of anti-diarrhea such as loperamide or diphenoxylate / atropine can provide moderate improvement in symptoms of incontinence and remain the drug of choice. Codeine phosphate shows similar benefits but causes drowsiness and addiction, whereas diphenoxylate / atropine causes dry mouth.[14,15]

Postmenopausal women with fecal incontinence can benefit from estrogen replacement therapy. In a prospective study of estrogen administration, postmenopausal women with flatus or faecal incontinence and the urgency of the stool become asymptomatic after 6 months of therapy. Resting anal pressure and during voluntary contractions also increase after estrogen therapy.[1,14]

Biofeedback therapy is a safe and effective therapy. This therapy improves the symptoms of fecal incontinence, restores quality of life, and improves the objective parameters of anorectal function. This therapy is useful in sufferers with weak sphincter and / or disturbed rectal sensations. Behavioral therapy using the technique "operant conditioning," has been shown to improve bowel function and incontinence. Anal plugs, sphincter mass compaction therapy, or electrical stimulation must be experimental and require controlled clinical studies.[14,15]

In this pandemic era, women with anal incontinence should initially be managed by remote communication. Facilities for remote communication can vary- telephone/ video conferencing. If possible, it may be useful to obtain history prior to the hospital visit using a structured general history questionnaire with validated condition specific questionnaires returned via secure email access or Electronic Personal Assessment Questionnaire such as EPAQ-Pelvic Floor. Non-computer literate patients can be asked questions over the phone or sent the documents in the post with a return addressed stamped envelop. A relevant clinical history should be taken to elucidate the type and severity of the symptoms. Categorise the woman's anal incontinence as urge anal incontinence (needs to rush to toilet and may have a bowel accident before getting there,) passive anal incontinence (urgency not associated with incontinence, fecal matter just comes out) or flatus incontinence or mixed. Remote telephone follow-up recommended on a monthly basis.[7,8]

**Surgery**

Surgery must be considered in certain sufferers who fail to be treated with conservative efforts or biofeedback therapy. In most patients with fecal incontinence, for example after obstetric trauma, overlapping sphincter repair is often sufficient. The stump of the torn sphincter muscle is linked. Symptoms have been reported to improve in 70–80% of patients, although one study reported a lower rate of improvement. In patients with incontinence due to weak but intact anal sphincter, postanal repair has been tried. The long-term success of this approach has a range between 20% and 58%. In patients with severe structural damage from anal sphincter and significant incontinence, neo-sphincter construction has been tried using two different approaches: (1) neo-sphincter construction of autologous skeletal muscle, often from gracilis muscle and rarely from gluteus muscle ; and (2) the use of artificial intestinal sphincter. Techniques in the form of transposition of stimulated gracilis muscle (dynamic graciloplasty) have been tested at many research centers. Techniques Clinical improvement (success) occurred between 38% and 90% (mean 67%). Another approach is by artificial implantation of the sphincter intestine. The artificial sphincter consists of a device with a cuff that can be inflated with liquid from a reservoir of a balloon that is implanted and controlled by a subcutaneous pump, nearly 75% reported satisfactory results. Both approaches require major surgery and the revision rate reaches 50%. Although graciloplasty is more expensive than conventional therapy, sufferers value their quality of life

better with this procedure. Colostomy is the least preferred procedure.[14]

The Malone or antegrade continent enema procedure consists of placing a cecostomy or appendicostomy button. If the above techniques are not suitable or have failed, colostomy is performed as a safe procedure even though it is aesthetically less favored by many sufferers. In many cases, colostomy can restore quality of life and reduce clinical symptoms. There are no controlled studies that have compared surgical management with pharmacological therapy or biofeedback therapy. There are also no controlled studies comparing the differences between various surgical approaches. However, several surgical techniques have been proposed. Because the outcomes of most of the initial procedures range from significant improvements to unsatisfactory results in the long run, then no single surgical procedure is universally acceptable. It seems that, with better understanding of pathophysiology, the development of safer and better surgical techniques, as well as prospective controlled studies, in the near future it will be possible to choose younger patients with more sphincter defects obviously to undergo appropriate surgery. For surgery treatment in pandemic era, surgery is reserved for the emergency cases and all medical personel involved should wear 3rd level of self-protection equipment during surgery.[12,13]

**Management During Covid-19**

**Table 1:** Recommendations from The EAU Urinary and Alvi Incontinence Guidelines Panel Applicable during The COVID-19 Pandemic[15]

| Treatment | | |
|---|---|---|
| Priority category | Low priority | High priority |
| Definition | Clinical harm very unlikely if postponed 6 months | Clinical harm very likely if postponed >6 weeks |
| Conservative management | Lifestyle modification and fluid management<br>Management of associated conditions<br>Provision of containment products<br>Pelvic Floor Muscle Training<br>Electrical/ Magnetic Stimulation | |
| COVID-recommendation | Defer – If capacity allows then written information can be given to primary care colleagues regarding medication adjustment, bowel management, provision of containment products, weight loss, fluid management, prompted voiding and bladder training. | |
| Pharmacotheraphy | Pharmacotherapy for urge urinary incontinence or stress urinary incontinence.<br>Pharmacotherapy for postprostatectomy incontinence<br>• Review of medication efficacy | |
| COVID-recommendation | Defer - If capacity allows for remote symptom assessment and pharmacotherapy is felt to be appropriate then advice regarding prescribing can be given to primary care colleagues. Do not recommend pharmacological treatments that require monitoring e.g. Desmopressin | |
| Surgical Treatment | Surgical treatment of stress urinary incontinence or stress predominant mixed incontinence<br>Surgical treatment of urge urinary incontinence or urge predominant mixed Incontinence<br>Surgical treatment of urethral diverticula.<br>Surgical treatment of postprostatectomy incontinence.<br>Surgical treatment of nonobstetric urinary tract fistulae | • Surgical treatment of urinary tract fistulae where oncological treatment such as systemic chemotherapy or intra-cavity radiotherapy can only proceed if fistula is closed. |
| COVID-recommendation | Defer | Consider early fistula repair on a case-by-case basis |

**Telemedicine**

The AUGS Guidelines, the American College of Obstetricians and Gynecologists (ACOG) guidelines, the American Society of Colon and Rectal Surgeons (ASCRS) clinical practice guidelines, and systematic reviews are summarized to guide the treatment of prolapse through telemedicine. Pelvic organ prolapse can be a challenge to be evaluated without physical examination. However, virtual visits provide an opportunity to advise patients about the pathophysiology, possible treatment options, and techniques to prevent development.[16]

In this case, one of the more interesting problems is the increased interest in telehealth. Telehealth refers to health care activities carried out by telecommunications. Current Telehealth practices have evolved beyond traditional diagnostic and monitoring activities to include consumer and professional education. This includes different application domains, including live video conference, asynchronous data transmission, remote patient monitoring and cellular health. Available literature data seem to indicate that telehealth has been successfully applied in several general clinical scenarios, including follow-up care after surgical treatment of pelvic organ prolapse.[17]

An important element of the transition to telemedicine is maintaining a unique element of trust, privacy and information sharing that occurs between providers and patients. A study comparing screen-to-screen interactions and face-to-face interactions between Female Pelvic Medicine and Reconstructive Surgery (FPMRS) and patients with pelvic organ prolapse highlight three main communicative functions of medical interactions: (1)

information exchange, (2) relationship building, and (3) perceived joint decision making. The authors concluded that virtual visits can provide similar patient satisfaction by building strong therapeutic relationships with patients through education, active listening, and joint decision making. Telemedicine for women with urogynecological problems can be performed in cases of urinary incontinence or defectory, urinary dysfunction or urinary defector, pelvic organ prolapse, and UTI.16

**1) Urinary incontinence**

A systematic review was recently published on treatment options for women with urinary incontinence. This systematic review focuses on studies on adult women with stress urinary incontinence (SUI), urgency urinary incontinence (UUI), or mixed urinary incontinence (MUI); women are excluded if they are pregnant or hospitalized. We update this review with additional studies published since August 2018.[16]

Based on this latest systematic review, six additional studies, and expert consensus:[16]

- SUI, UUI, and MUI can be discussed and treated with telemedicine (EC).
- Behavioral therapy including bladder training, pelvic floor physical therapy or Kegel exercises, weight loss, and yoga have shown significant improvement and / or complete resolution of SUI and UUI symptoms.
- Patients currently treated with third-line treatment for UUI such as intradetrusor onabotulinum toxin A or percutaneous tibial nerve stimulation can return to behavior modification and drugs (anticholinergic or β-adrenoceptor agonists) until they can return for inpersonal visits (EC).
- Smartphone application can be used to help teach and track Kegel exercises.

**2) Pelvic organ prolapse, defecation dysfunction, faecal incontinence**

Pelvic organ prolapse can be a challenge to be evaluated without physical examination. However, virtual visits provide an opportunity to advise patients about the pathophysiology, possible treatment options, and techniques to prevent development. Similarly, for bowel dysfunction and faecal incontinence, conservative steps can be initiated to help relieve the symptoms of the patient. It is important to note that changes in bowel habits, weight loss, and rectal bleeding may require referral to a gastroenterologist or colorectal surgeon to rule out colorectal cancer. It should be noted, if a patient reports new onset faecal incontinence or worsening acute fecal incontinence, she must be screened for other symptoms of COVID-19 and then referred for appropriate treatment, because diarrhea is a possible symptom of COVID-19.[16]

**A. Pelvic organ proplapse**

- Only 10-20% of women will experience an increase in the stage of prolapse for 2 years; therefore, most patients can be convinced of the delay in surgical or pessary management
- Weight loss, reduced activity that suppresses the pelvic floor, stop smoking, and avoid constipation can improve symptoms and reduce the progression of prolapse
- Pelvic floor exercises and muscle exercises can reduce prolapse in some patients. For pelvic muscle training, providers can suggest online instructions. Home biofeedback devices can be used, such as Leva®, which is a pelvic floor muscle trainer equipped with FDA visualization technology, smartphone applications, vaginal ballast, virtual pelvic floor therapy appointments, or internet pelvic floor training
- Encouraging the patient to splint or insert a large tampon can help relieve symptoms in cases of prolapse that causes incomplete emptying of the bladder.[16]

**B. Defecation dysfunction**

- Changes in diet and fiber supplementation (insoluble fiber) can increase faecal consistency and help faecal evacuation
- Osmotic laxatives or stimulants can help with bowel dysfunction and postoperative constipation.
- Changes in position during bowel movements or potty can increase bowel movements.
- *Splinting* through the vagina or in the perineum can help women with incomplete evacuation of the rectocele.[16]

**C. Fecal Incontinence**

- Protective devices can be utilized. This includes adult sanitary napkins or diapers, adhesive patches (eg, butterfly pads), and skin care with protective zinc-based ointments.
- Food diary can be used to identify avoided triggers. Triggers associated with loose stool can include sugar, caffeine, and lactose replacement..
- Medications that can cause loose stool should be avoided. Some common medications that cause diarrhea include: antacid, proton pump inhibitor, antibiotic, SSRI, beta blocker, ACE inhibitor, metfromin, and cholestyramine.
- Dietary fiber (soluble) with increased fluid intake can deliver more impurities to the stool and help achieve ideal stool consistency.
- Consider medications to treat loose stool and help fecal incontinence..
- Intestinal schedules, tap water enemas, glycerin, or bisacodyl suppositories can help patients evacuate the rectum.[16]

## 3. Conclusion

Urinary and faecal incontinence is a condition that embarrasses the patient and is isolated from the environment. The success of therapy depends on the accuracy of the diagnosis that is the cause. A careful history, physical examination and a good additional examination are needed. Treatment can be done either with conservative or operative therapy or surgery. During this COVID-19 pandemic, telemedicine can limit community exposure to the most vulnerable population while simultaneously granting patients the opportunity to establish or continue care with a provider. Overall, behavioral and conservative management will be valuable as first-line treatments provided in a virtual setting

(via phone or internet communication). There are situations that will require different treatments in the virtual setting than in person, and there are some that will require an in-person visit despite the risks of COVID-19 exposure and spread. PPE should be worn in case if the need arises for the patient to visit the hospital.

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