GLOBAL INTERSTITIAL CYSTITIS
BLADDER PAIN SOCIETY

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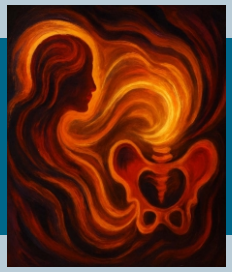
GIBS NEWSLETTER



Role of the HPA axis in the evolution of chronic pelvic pain and IC/BPS

Latest Updates

DECADE Celebration!!
10th Annual Congress on IC/BPS - GIBS 2025

Date : 23rd & 24th August 2025
Venue : Kokilaben Dhirubhai Ambani Hospital, Mumbai

Theme: Decode, Demystify, Drive IC/BPS

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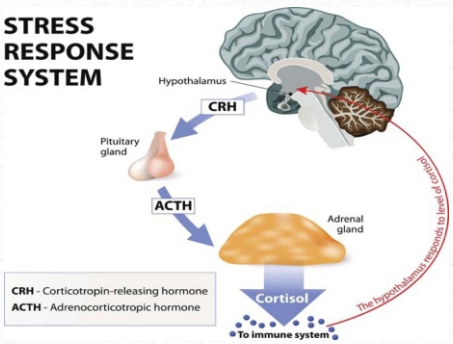
Chronic pelvic pain (CPP) refers to persistent pain in the lower abdomen or bladder that lasts six months or more**.** It encompasses **interstitial cystitis/bladder pain syndrome (IC/BPS)**, chronic pelvic pain syndrome and gynaecological disorders such as **endometriosis**, **vulvodynia** and **dysmenorrhoea**. Growing evidence suggests that pain is amplified not just by peripheral lesions but by dysregulation of central stress pathways, particularly the **hypothalamus–pituitary–adrenal (HPA) axis**. Many sufferers' report anxiety, depression or a history of trauma, suggesting that dysregulation of the(HPA) axis-the body's central stress-response system-may contribute. Recognising how stress hormones interact with pelvic tissues helps explain why some patients experience severe symptoms despite minimal lesions.

Stress physiology and the HPA axis

When a threat is perceived, the hypothalamus secretes *corticotropin-releasing factor* (CRF), prompting the pituitary gland to release *adrenocorticotrophic hormone* (ACTH); ACTH then stimulates the adrenal cortex to secrete **cortisol**. Cortisol mobilises glucose, maintains blood pressure and modulates immunity. It normally peaks in the early morning and falls toward midnight. Negative feedback at the hypothalamus and pituitary terminates the response once the stressor resolves. Prolonged stress overwhelms this system: CRF signalling can initially raise cortisol levels, but persistent activation eventually leads to **hypocortisolism** as nutrient reserves become depleted and feedback inhibition intensifies. Low cortisol is associated with heightened pain sensitivity and poor healing. Some individuals with high adversity show elevated cytokines without altered cortisol, reinforcing the concept of glucocorticoid resistance. Similar alterations occur in endometriosis and vulvodynia: acute stress causes hypercortisolism that shifts to hypocortisolism and central sensitisation as disease becomes chronic. Fluctuations in oestrogen and progesterone modulate these responses, helping to explain why pain varies with menstrual cycles, pregnancy or menopause.



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References

1. **References**
Westropp JL, Stella JL, Buffington CAT. Interstitial cystitis-an imbalance of risk and protective factors? Front Pain Res (Lausanne). 2024 May 9;5:1405488. doi: 10.3389/fpain.2024.1405488. PMID: 38784787; PMCID: PMC11112028.

2. Schrepf A, O'Donnell M, Luo Y, Bradley CS, Kreder K, Lutgendorf S; Multidisciplinary Approach to the Study of Chronic Pelvic Pain (MAPP) Research Network. Inflammation and inflammatory control in interstitial cystitis/bladder pain syndrome: Associations with painful symptoms. Pain. 2014 Sep;155(9):1755-1761. doi: 10.1016/j.pain.2014.05.029. Epub 2014 Jun 5. PMID: 24907404; PMCID: PMC4166494.

3. Colaco M, Evans R. Current guidelines in the management of interstitial cystitis. TranslAndrol Urol. 2015 Dec;4(6):677-83. doi: 10.3978/j.issn.2223-4683.2015.11.03. PMID: 26816869; PMCID: PMC4708542.

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Evidence linking stressaxis dysregulation to pelvic pain

Stress and trauma are common among people with IC/BPS. In the Multidisciplinary Approach to Pelvic Pain (MAPP) network, researchers measured diurnal cortisol and inflammatory markers in IC/BPS patients. They found **flatter cortisol slopes and higher nocturnal cortisol**, reflecting a blunted daily rhythm, and noted that participants with the weakest cortisol rhythms and strongest immune responses experienced the most severe pain. These data imply that poor HPA regulation fails to restrain inflammation, allowing immune mediators such as interleukin-6 and mast-cell products to drive nociceptor sensitisation.

Other studies show that cortisol responses can be high early in disease but become blunted as stress persists, particularly in those with a history of abuse or trauma. Stress also acts locally: CRF released in pelvic tissues activates **mast cells**, prompting histamine and cytokine release that sensitises nerves and promotes **hyperalgesic priming**.

Management: addressing mind and body

Because stress and inflammation underpin many cases of IC/BPS, treatment must address both psychological and physiological factors. The American Urological Association recommends a tiered strategy that begins with **conservative interventions**: patient education about normal bladder function, dietary adjustments (avoiding caffeine, acidic foods and artificial sweeteners), pelvic floor relaxation and **stress-management techniques** such as mindfulness, yoga, deep breathing, and cognitive-behavioural therapy (CBT). Teaching patients that flares often follow stress helps reframe symptoms and reduces catastrophising. Conservative measures also include timed voiding, gradual increase of bladder capacity .

If symptoms persist, **second-line therapy** introduces manual pelvic floor physical therapy and selected medications such as amitriptyline or pentosan polysulphate sodium. Invasive procedures are reserved for refractory cases. Throughout all tiers, **psychological therapies** remain important: randomised trials show that CBT combined with bladder treatment yields greater improvements than bladder therapy alone by reducing catastrophic thinking and improving coping skills.

Conclusion

Chronic pelvic pain and IC/BPS exemplify the intricate connection between mind and body. Stress activates the HPA axis to mobilise cortisol, but persistent stress can flatten cortisol rhythms and deplete reserve. Dysregulated cortisol fails to curb inflammation, while CRF-induced mast-cell activation in pelvic tissues sensitises nociceptor. Recognising this physiology underscores the need for **biopsychosocial care**. Assessing trauma and stress, encouraging lifestyle changes and integrating physical and psychological therapies—offers the best chance of relief through Biopsychosocial approach. Emerging stress-axis modulators may soon provide targeted treatments for these challenging conditions. A holistic approach that targets both neuroendocrine dysfunction and immune activation offers the best chance of relieving pain and improving quality of life.

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DRUG SNIPPET FOR TREATMENT OF ICBPS

PENTOSAN POLYSULFATE SODIUM INSTILL

Available as 10mg/ml in 30 ml vials

Dosing: Upto 8- 12 weeks

Method

Step 1 Catheterization and Initial Instillation

- Ensure all materials are sterile and ready for use, including an 8Fr catheter, 8.4% Sodium Bicarbonate, and 1% Lidocaine.
- Have the patient positioned comfortably for catheterization.
- Catheterization: Insert the 8Fr catheter into the bladder to drain it completely.

Instillation

- Prepare a mixture of 8.4% Sodium Bicarbonate (3mL) and 1%Lidocaine (8 mL).
- Instil the prepared solution into the bladder via the catheter.
- **Retention Time:** Allow the solution to remain in the bladder for 5 minutes.

Step 2 Administration of Intravesical Treatment

- **Instillation:** Instill the pentosan poysulfate Intravesical solution 30ml into the bladder via the catheter.
- **Retention Time:** Instruct the patient to retain the solution in the bladder for 30minutes to a maximum of 60 minutes.
- **Void:** After the retention period, have the patient void the bladder to remove the solution.

Step 3 Post-Treatment Instructions

- Ensure the patient voids the bladder completely after the retention period.
- Monitor the patient for any immediate adverse reactions.
- Provide the patient with aftercare instructions, including signs of adverse effects and when to seek medical attention.
- Schedule follow-up instillations.

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