



## STUDY OF PELVIC ORGAN DYSFUNCTION IN PARKINSON'S DISEASE

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### **Abstract :**

**INTRODUCTION** Pelvic organ dysfunction (urinary bladder, bowel and genital organs) is well recognized in Parkinsons disease (PD). However the incidence of this condition is not well established. **AIM** To ascertain the incidence and characteristics of pelvic organ dysfunction in patients with PD. **METHODS** This is a case control (questionnaire based) study. 100 patients with PD and 50 age matched controls were included in this study. Questionnaire based on Sakakibara R et al study regarding the three pelvic organ dysfunction was applied to the patients and controls. The findings were compared with age matched control subjects. All PD patients were on levodopa without dopamine agonists. The questionnaire assessed the bladder (nine questions), bowel (four questions) and sexual function (three questions for women, five for men). Each question was scored from 0(none)to 3(severe)with an additional quality of life(QOL)index scored from 0(satisfied)to 3(extremely dissatisfied). **RESULTS** As compared with the control group, the frequency of dysfunction in the PD group was

significantly higher for constipation(58), difficulty in expulsion(54) ,diarrhea (13) urinary urgency(25), daytime frequency (43),nighttime frequency(52),urge incontinence(20), poor stream (men50),straining (19) decrease in libido (74), decrease in sexual intercourse(78), decrease in orgasm (50) and in men, decrease in erection(57) and ejaculation(46). The dissatisfaction score of PD patients was significantly higher for sexual dysfunction(56)compared to bladder(23)and bowel(30).

**Keyword :**Parkinson's disease,Pelvic organ dysfunction

### **INTRODUCTION:**

Parkinson's disease (PD) is a movement disorder which is associated with degeneration of dopaminergic neurons in the substantia nigra. The cardinal features of PD are hypokinesia, rigidity and tremors. Apart from these motor manifestations nonmotor symptoms are also present, but are not well recognised unless specifically enquired. The nonmotor manifestations include sleep disturbances, neuropsychiatric disorders, sensory symptoms, and autonomic disorders.<sup>1</sup> Bladder, bowel, and sexual dysfunction (also called "pelvic .

organ" dysfunctions) is one of the most common autonomic disorders.<sup>2,3</sup> Pelvic organ dysfunction is well recognized in Parkinson's disease (PD). However the incidence of this condition is not well established

#### **AIM:**

To ascertain the incidence and characteristics of pelvic organ dysfunction in patients with PD.

#### **Questionnaire on pelvic organ function- Bladder condition**

#### **METHODS:**

This is a case control (questionnaire based) study. 100 patients with PD and 50 age matched controls were included in this study. Questionnaire based on Sakakibara R et al<sup>2</sup> study regarding the three pelvic organ dysfunction was applied to the patients and controls. The findings were compared with age matched control subjects .All PD patients were on levodopa without dopamine agonists. The questionnaire assessed the bladder (nine questions), bowel( four questions) and sexual function (three questions for women, five for men). Each question was scored from 0 (none)to 3(severe)with an additional quality of life(QOL)index scored from 0 (satisfied)to 3(extremely dissatisfied).

Do you feel urgency to urinate?	Never	Occasionally (>once a month)	Sometimes (>once a week)	Always (>once a day)
How often do you go to toilet during the day?	3-7 times	8-9 times	10-11 times	( ) times
How often do you go to toilet during the night?	Never	Once	twice	( ) times
Do you feel your urine does not come out quickly?	Never	occasionally	sometimes	always
Do you have a weak stream or need a long time to urinate?	Never	occasionally	sometimes	always
Do you urinate in a start and stop manner?	Never	occasionally	sometimes	always
Do you strain yourself when you urinate?	Never	occasionally	sometimes	always
Do you feel there is residual urine after urination?	Never	occasionally	sometimes	always

Do you leak urine?	never	occasionally	sometimes	always
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How often do you have a bowel movement?	( )times a day	Once a day	½ days	1/( ) days
Do you take a laxative?	Never	Occasionally (>once a month)	Sometimes (> once a week)	Always (> once a day)
Do you have difficulty in expulsion?	Never	Occasionally	Sometimes	Always
Do you leak feces?	Never	occasionally	sometimes	always
When do you leak? (tick all if necessary)	During diarrhoea	Cannot hold feces because of urgency	On coughing or standing up	Unwittingly
What is the volume?	Soil underwear slightly	Soil underwear moderately	Other ( )	
Do you have diarrhoea?	Rarely	Occasionally	sometimes	Always
What is the occurrence?	Diarrhoea only	Alternating with constipation	Other ( )	
Are you satisfied with your bowel condition?	satisfied	Slightly dissatisfied	Moderately dissatisfied	Extremely dissatisfied

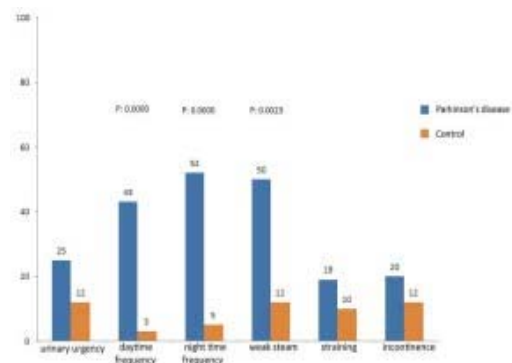
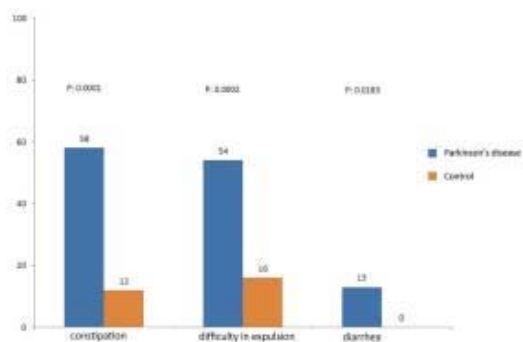
Bowel condition				
How often do you have a bowel movement?	( )times a day	Once a day	½ days	1/( ) days
Do you take a laxative?	Never	Occasionally (>once a month)	Sometimes (> once a week)	Always (> once a day)
Do you have difficulty in expulsion?	Never	Occasionally	Sometimes	Always
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Are you satisfied with your bowel condition?	satisfied	Slightly dissatisfied	Moderately dissatisfied	Extremely dissatisfied

<b>Sexual condition</b>				
	No	Slightly	Moderately	Very much
Has sexual intercourse decreased?	No	Slightly	Moderately	Very much
How often do you think your erections have decreased?	Never	Occasionally	Sometimes (about half the time)	Most times
How often do you think your ejaculations have decreased?	Never	Occasionally	Sometimes	Most times
How often do you think your orgasms have decreased?	Never	Occasionally	Sometimes	Most times
Are you satisfied with your sexual condition?	satisfied	Slightly dissatisfied	Moderately dissatisfied	Extremely dissatisfied

## RESULTS

### (A) Bowel dysfunction

### (B) Bladder dysfunction



### Bowel dysfunction

### PD

### Control

Constipation

58%

12%

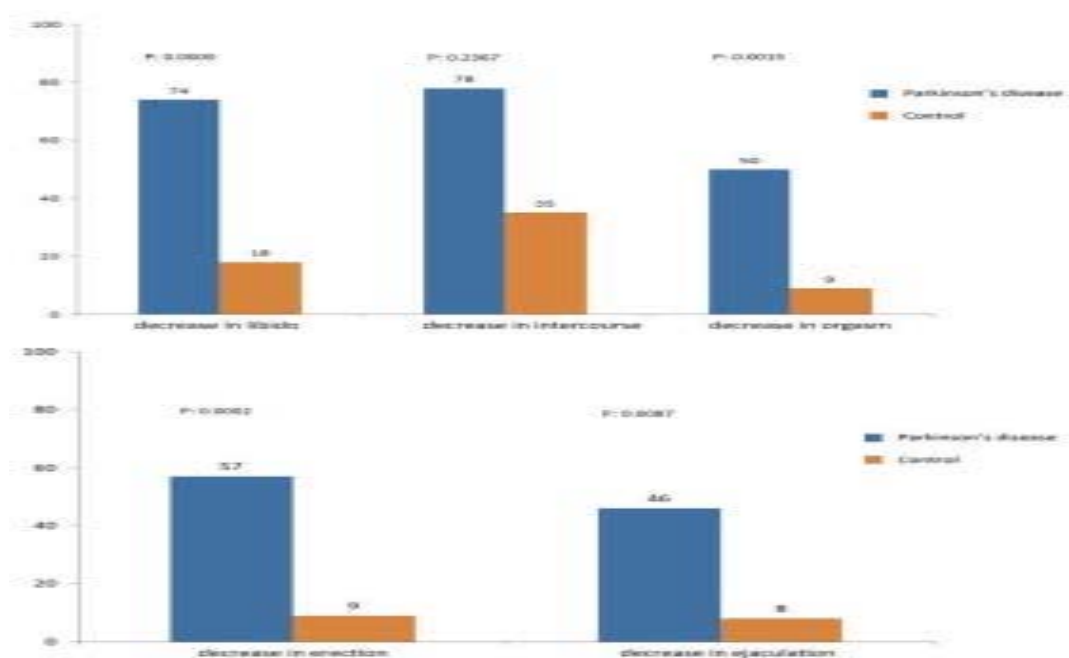
Difficulty in expulsion

54%

16%

Bladder dysfunction	PD	Control
Urinary urgency	25%	12%
Day time frequency	43%	3%
Night time frequency	52%	5%
Urge incontinence	20%	12%
Poor stream(in men)	50%	12%
Straining	19%	10%

### (C) Sexual dysfunction



Sexual dysfunction	PD ( M, F )	Control ( M, F )
Decreased libido	74% ( 57 , 17 )	18% (8, 10 )
Decreased intercourse	78% ( 60 , 18 )	35% (23, 12 )
Decreased orgasm	50% ( 40, 10 )	9% (5, 4 )
Decreased erection	57%	9%

## Discussion:

Bladder, bowel and sexual dysfunction (also called “pelvic organ” dysfunctions) are common nonmotor disorders in Parkinson’s disease (PD). Unlike motor disorders, autonomic dysfunctions of pelvic organ are usually unresponsive to treatment with levodopa. Dopamine-basal ganglia circuit, which normally suppresses the micturition reflex, is altered in Parkinson’s disease that causes the bladder dysfunction (overactivity). On the other hand, bowel dysfunction is due to both peripheral and central pathology. Myenteric pathology causes slowing of colonic transit (loss of rectal contractions) and central involvement causes weak strain and paradoxical anal sphincter contraction on defecation. Hypothalamic dysfunction via altered dopamine-oxytocin pathways, which normally promote libido and erection is responsible for the sexual dysfunction (decrease in libido and erection) in PD. Unlike motor disorder, pelvic organ dysfunctions are often unresponsive to levodopa, suggesting that they occur through a complex pathomechanism.<sup>4</sup> Anticholinergic agents used to treat bladder dysfunction in PD, should be used with caution particularly in elderly patients who have cognitive decline.

Bowel dysfunction is treated with dietary fibers, laxatives, and “prokinetic” drugs such as serotonergic agonists. Phosphodiesterase inhibitors are used to treat sexual dysfunction in PD. These treatments might be beneficial in maximizing the patients’ quality of life.

In our study pelvic organ dysfunction in the PD group was significantly higher than control, similar to that of few previous studies.<sup>5,6,7</sup> In bowel dysfunction which includes constipation (58%,  $p=0.0001$ ), difficulty in expulsion (54%,  $p=0.0002$ ), diarrhoea (13%,  $p=0.0183$ ) is statistically significant compared to

control, which is similar to that seen in the study of Sakakibara R et al (63%, 57%, 21%, respectively).<sup>5</sup> Constipation was found to be less frequent in the PD group in the study of Singer C et al (43.9%), when compared to our study.<sup>6</sup>

Bladder dysfunction revealed urinary urgency (25%), daytime frequency (43%), night time frequency (52%), urge incontinence (20%), prolongation/poor stream (men 52%), straining (19%) as in the study of Sakakibara et al.<sup>5</sup> Prevalence of urinary symptom was more in the PD group (nocturia 86%, daytime frequency 71%, urgency 68%) in the study of Winge K et al.<sup>7</sup> Sexual dysfunction revealed a decrease in libido (74%), decrease in sexual intercourse (78%), decrease in orgasm (50%) and in men, decrease in erection (57%) which is less compared to previous study by Sakakibara et al (84%, 88%, 87%, 79% respectively).<sup>5</sup> Study of Kummer A et al showed similar findings as our study with loss of libido (65.6%) and erectile dysfunction (42.6%).<sup>8</sup> The dissatisfaction score of PD patients was significantly higher for sexual dysfunction (56%) compared to bladder (23%) and bowel (30%).

## CONCLUSION:

This study showed that bladder, bowel and sexual dysfunction are present in majority of patients with PD and often under reported. The symptoms of pelvic organ dysfunction should be specifically sought for during assessment and effectively treated in view of improving the quality of life.

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