

# Hormone Replacement Therapy is Associated with Disease Activity Improvement Among Post-Menopausal Women with Inflammatory Bowel Disease

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## Introduction

- Hormone replacement therapy (HRT) is commonly used in post-menopausal women for a variety of medical conditions including menopausal symptoms and cancer.
- Current data on the effect of HRT on IBD in post-menopausal women is limited.

## Aim

Determine the effect that HRT has on disease activity in post-menopausal women with IBD compared to post-menopausal women not on HRT with IBD

## Methods

- Multi center retrospective cohort study
- Inclusion criteria:
  - Post-menopausal women with IBD
  - Started on HRT between 1/1/2000 and 12/31/2020
- Electronic health records were reviewed for demographics, menopause history, IBD history, medications, IBD related surgeries and hospitalizations at any time pre- and post-HRT, and disease activity within 3 years pre- and post-HRT.
- Patients on HRT were compared to controls who were postmenopausal with a history of UC or Crohn's.
- The physician global assessment (PGA) score was used to quantify disease activity into remission (0), mild (1), moderate (2), or severe (3) categories.
- McNemar's test was used to compare outcomes pre- and post-HRT given the paired nature of the data.

	Full HRT cohort (n=37)	Matched HRT cohort (n=31)	Controls (n=31)	P-value (Matched HRT vs control)
<b>Age at menopause</b>	46.4 ± 9.0	49.2 ± 6.5	48.3 ± 5.3	NS
<b>Menopause type</b>				
Natural	26 (70%)	19 (61%)	NA	
Surgical	11 (30%)	12 (39%)	NA	
<b>IBD type</b>				NS
Crohn's	22 (59%)	19 (61%)	19 (61%)	
Ulcerative colitis	15 (41%)	12 (39%)	12 (39%)	
<b>Duration of IBD</b>	12.7 ± 10.5	12.8 ± 10.9	NA	
<b>Type of HRT</b>				
Estrogen alone	26 (70%)	20 (65%)	NA	
Estrogen + Progesterone	11 (30%)	11 (35%)	NA	
<b>Disease severity pre-menopause</b>				<b>0.03</b>
0		9 (29%)	19 (61%)	
1		13 (42%)	9 (29%)	
2		5 (16%)	3 (10%)	
3		4 (13%)	0 (0%)	
<b>Disease severity post-menopause</b>				NS
0		17 (55%)	21 (68%)	
1		12 (39%)	7 (23%)	
2		1 (3%)	3 (10%)	
3		1 (3%)	0 (0%)	
<b>PGA ≥2 pre-menopause</b>				NS (0.11)
No		22 (71%)	28 (90%)	
Yes		9 (29%)	3 (10%)	
<b>PGA ≥2 post-menopause</b>				NS
No		29 (94%)	28 (90%)	
Yes		2 (6%)	3 (10%)	

Table 1. Demographics and clinical characteristics of HRT cohort and controls

**HRT treatment was associated with a 5.6x increase in odds of post-HRT PGA score improvement vs controls (OR 5.6; 95% CL 1.6, 19.7)**

## Results

- Of 249 patients recognized from initial search, **37 women** fulfilled the inclusion criteria
- 31 matched controls were identified that were within a 5-year range of menopause of the HRT patients selected (61% CD, 39% UC).
- Using PGA score as a surrogate marker for disease activity:
  - Greater disease severity in the HRT cohort pre-menopause (p=0.03) and trend towards greater frequency of PGA score ≥2 (p=0.11).
  - There was a significant *reduction* in frequency of PGA ≥2 post-HRT treatment (p<0.01).
  - Controls showed no change in IBD disease activity between pre- and post-menopause
- HRT treatment was associated with a 5.6x increase in odds of post-HRT PGA score improvement compared to controls (OR 5.6; 95% CL 1.6, 19.7) in univariate logistic regression analysis.

## Conclusions

- Post-menopausal IBD women who underwent HRT therapy had a significant improvement in their disease activity following HRT compared to post-menopausal women without HRT therapy, who showed no change in disease activity.
- Pre-HRT disease activity seemed to be higher in patients who underwent HRT compared to the controls.
- We found that women with more active disease were more likely to undergo HRT.
- There may be greater utility in comparing the difference in disease activity between pre- and post-menopause across both cohorts to determine if HRT has an effect on disease activity.

## References

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