Healthcare Resource Use Among Women Treated with Adjuvant Endocrine Therapy for Hormone-Receptor Positive Breast Cancer: Associations with Induced Vasomotor Symptoms and Treatment Adherence

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BACKGROUND

- Patients with breast cancer (BC) who are non-adherent to adjuvant endocrine therapy have worse clinical outcomes than those who are adherent.[1]
- Side effects of treatment, including induced vasomotor symptoms (iVMS), are a common cause of non-adherence.[2]
- There is a knowledge gap on how iVMS and non-adherence in this population are related to healthcare resource use (HCRU).

METHODS

- **Study design:** Retrospective cohort study.
- **Data source:** The Guardian Research Network electronic health record (EHR) US database.
- **Study population:** Women aged 18–70 years treated with adjuvant endocrine therapy following an initial diagnosis of stage 0–III hormone receptor-positive BC.
- **Study period:** Jan 2016–Jun 2023.
- **Subgroups:** Women were stratified into 4 subgroups by adherence to adjuvant endocrine therapy and presence of iVMS at the start of follow-up (index), and the start of distinct follow-up periods.

Adherence

Adherence was defined as ≥80% proportion of days covered (PDC).

iVMS

VMS was determined from women's notes via natural language processing, and was assumed to be related to endocrine therapy (i.e. iVMS) when recorded anytime following treatment initiation.

- **Start of follow-up:** Date of initiation with adjuvant endocrine therapy.
- **Outcomes:** All-cause and BC-related HCRU were identified from EHRs and manual curation of clinical notes.
- **Analysis:** HCRU rates were calculated as events/patient-month. Quasi-Poisson regression models were used to calculate incident rate ratios (IRRs) with 95% CIs for all-cause and BC-related HCRU for women:
  - with ≥1 record of iVMS vs. no record of iVMS
  - adherent to endocrine therapy vs. non-adherent

Models included adjustment for age at index (years), year of BC diagnosis, race, menopausal status, BC stage, primary BC treatment, and comorbidities.

RESULTS

Study cohort

- A total of 4459 women were included; 11% had stage 0 cancer, 57% had stage I, 25% had stage II, and 8% had stage III.
- Mean age at the start of adjuvant endocrine therapy was 57.3 years. 55% of women were postmenopausal (based on an ICD-10 code); 1.5% had a record of surgical menopause.
- 52% of women (n=2304) had a record of iVMS during follow-up (median [Q1, Q3] follow-up was 31.5 [17.4–51.7] months).

Healthcare resource use

- Most women had ≥1 HCRU event during follow-up: 99% for all-cause events, 94% for BC-related events.
- The most common were outpatient encounters, laboratory services and primary care encounters (**Fig 1**).

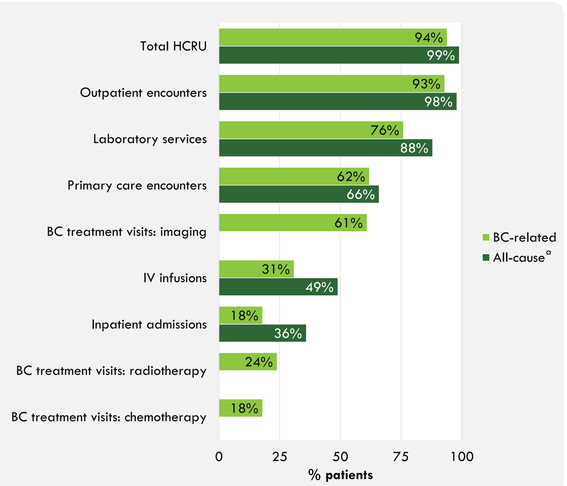


Fig 1. BC-related HCRU and all-cause HCRU events during follow-up. [a] Excluding BC-related encounters.

HCRU event rates by iVMS and adherence status

- Among women either non-adherent (<80% PDC; **Fig 2A**) or adherent (≥80% PDC; **Fig 2B**) to adjuvant endocrine therapy, those with ≥1 record of iVMS had higher rates of all-cause and BC-related HCRU vs. those without a record of iVMS across all follow-up periods.

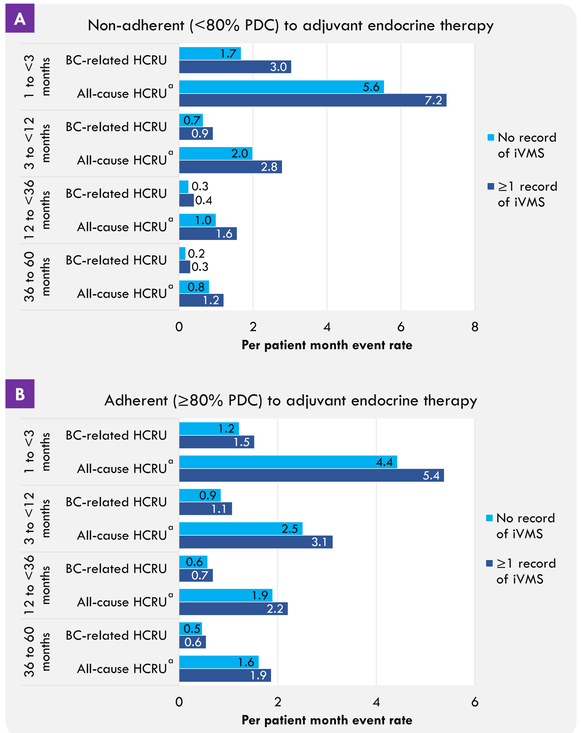


Fig 2. HCRU event rates in women with and without iVMS among those **(A)** non-adherent, and **(B)** adherent to adjuvant endocrine therapy. [a] Excluding BC-related encounters.

Comparison of HCRU event rates by iVMS vs. no iVMS

- In the regression models, women with ≥1 record of iVMS had higher rates of all-cause and BC-related HCRU vs. those without a record of iVMS over all follow-up periods (**Fig 3**).

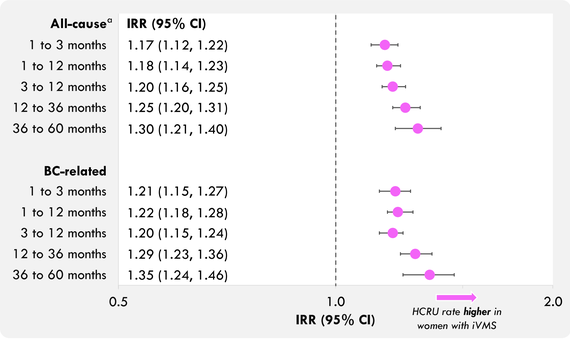


Fig 3. IRR (95% CI) for all-cause and BC-related HCRU in women with iVMS vs. no iVMS. [a] Excluding BC-related encounters.

Adherence vs. non-adherence to adjuvant endocrine therapy

- Irrespective of iVMS, women adherent to endocrine therapy had higher rates of all-cause and BC-related HCRU vs. those non-adherent from 3 months' follow-up onwards ($p<0.001$) (**Fig 4**).

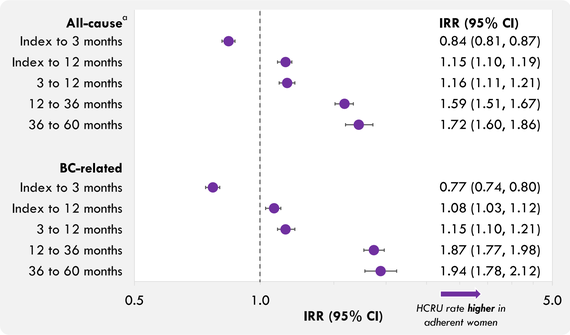


Fig 4. IRR (95% CI) for all-cause and BC-related HCRU in women adherent to adjuvant endocrine therapy vs. non-adherent. [a] Excluding BC-related encounters.

CONCLUSIONS

- Women who experienced iVMS after adjuvant endocrine therapy for hormone receptor-positive BC had higher rates of HCRU vs. those who did not experience iVMS.
- From 3 months after starting adjuvant endocrine therapy, women who were adherent to treatment had higher rates of HCRU vs those who were non-adherent, irrespective of iVMS.
- Effective management of iVMS may translate into lower HCRU rates.
- Possible under-reporting of iVMS is a limitation of the study.

References

1. Eliassen *et al. BMC Cancer*. 2023;23(1):625
2. Franzoi *et al. Lancet Oncol*. 2021; 22: e303–13

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