Poster: CO4

The Burden of Illness of Treatment-Induced Vasomotor Symptoms in Patients with Breast Cancer: A Systematic Literature Review

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Objective

- To conduct a systematic literature review (SLR) to assess the global burden of treatment-induced vasomotor symptoms (VMS) in patients with breast cancer
  - Participants were receiving tamoxifen or aromatase inhibitors (AIs) in the included studies

Conclusions

- This SLR highlights the significant burden of illness associated with treatment-induced VMS in individuals with breast cancer receiving tamoxifen or AI therapy
- Several studies reported a large proportion of individuals had moderate-to-severe symptoms
- Prevalence and frequency have been frequently investigated
  - Evidence gaps were identified for economic burden and treatment patterns. Further research is required to understand the unmet needs for this population

Limitations

- The searches and scope of the SLR could be expanded to identify data specifically relevant to individuals with treatment-induced VMS

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Methods

Study design

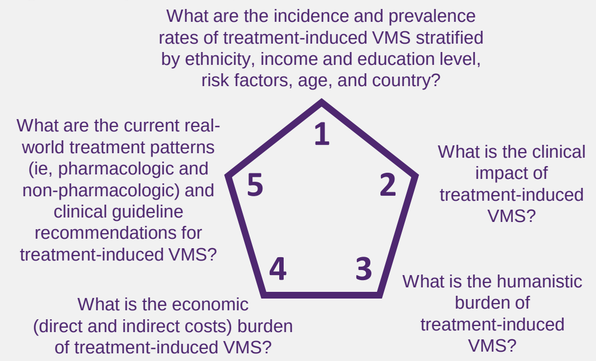
- Embase and PubMed were searched for observational and interventional studies
- Included studies were published between January 2010 and January 2023
- Population of interest
  - Adults receiving tamoxifen or AIs for breast cancer
  - Experiencing moderate-to-severe treatment-induced VMS
- Researcher roles
  - Literature screening and data extraction by one researcher
  - Quality checks by a second researcher
- Review included epidemiological, clinical, humanistic, and economic data

Table 1. Inclusion criteria

Population	Adults (≥18 years) receiving maintenance hormonal therapy (tamoxifen or AIs) for breast cancer with moderate-to-severe treatment-induced VMS
Intervention/ comparator	Any/all/none
Outcomes	Epidemiological (KRQ1); Clinical (KRQ2); Humanistic (KRQ3); Economic (KRQ4); Treatment patterns (KRQ5)
Study designs	Clinical trials, registries, cross-sectional surveys, retrospective database studies, prospective observational studies, modelling studies
Language	Publications in English, German, or French

AI, aromatase inhibitor; KRQ, key research question; VMS, vasomotor symptoms

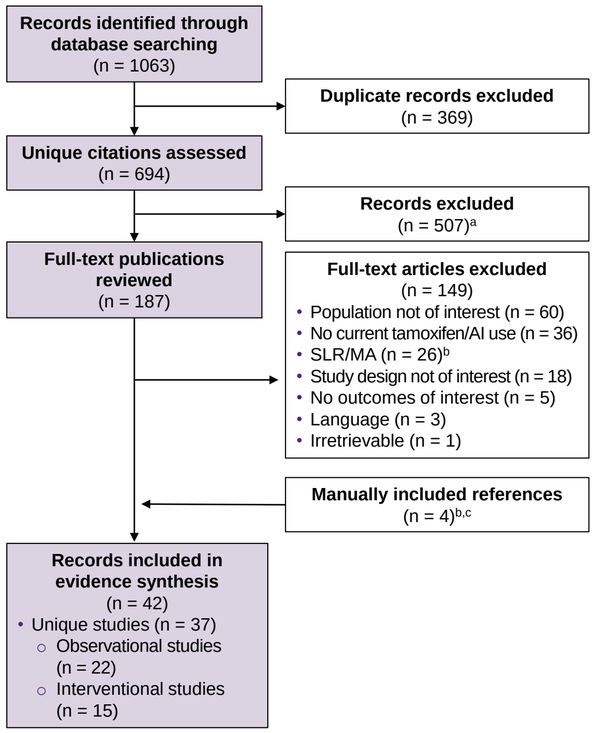
Figure 1. Key research questions



VMS, vasomotor symptoms

Results

Figure 2. Literature selection and review



AI, aromatase inhibitor; MA, meta-analysis; SLR, systematic literature review
[a]Records did not meet inclusion criteria
[b]The reference lists of SLRs were manually searched for any additional studies; three studies were identified for inclusion
[c]One additional study was manually identified for inclusion from a health technology assessment website

- Sample size
  - Observational: **10 to 3,595** participants
  - Interventional: **30 to 9,325** participants
- Location
  - Observational: **North America** (n = 8), **Asia-Pacific region** (n = 7), **Europe** (n = 4), **Australia** (n = 3)
  - Interventional: **Europe** (n = 7), **North America** (n = 4), **multiple regions** (n = 4)
- Population: primarily **post-menopausal** individuals with **early-stage breast cancer**
- **Most common interventions**
  - Observational: tamoxifen and anastrozole
  - Interventional: tamoxifen, anastrozole, and exemestane

Table 2. Number of observational and interventional studies reporting the outcomes of interest

KRQ	Outcome	Studies reporting outcome of interest: Observational	Interventional
#1	Prevalence/incidence of treatment-induced VMS	11	6
	Treatment-induced VMS: risk factors and associations	8	4
	Frequency, duration, and severity of treatment-induced VMS	10	6
#2	Presence of pre-existing liver function abnormalities	0	1
	Treatment-induced VMS-associated breast cancer treatment discontinuation	3	3
	Correlations of treatment-induced VMS with other clinical measures	3	3
#3	Humanistic burden	3	5
#4	Economic burden	0	0
#5	Treatment patterns	1	2

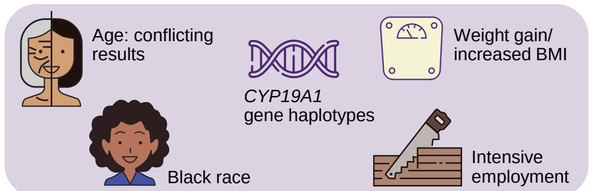
KRQ, key research question; VMS, vasomotor symptoms

Key research question #1: *What are the incidence and prevalence rates of treatment-induced VMS?*

- **Prevalence** ranged from **7.3% to 82.9%** in observational studies
- Across interventional studies, the **incidence** of treatment-induced VMS ranged from **17.8% at 6 months to 34.8% at 12 months**

Figure 3. Potential risk factors contributing to occurrence and/or severity of treatment-induced VMS

Observational

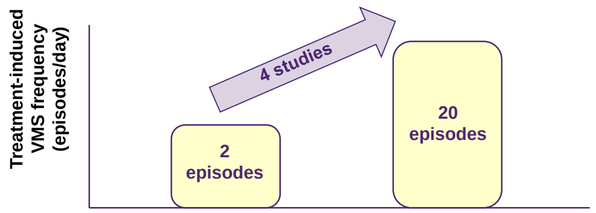


Interventional[a]

[a]Risk factors only reported in a single interventional study
BMI, body mass index; CYP, cytochrome; VMS, vasomotor symptoms

Key research question #2:
What is the clinical impact of treatment-induced VMS?

Figure 4. Frequency of treatment-induced VMS



VMS, vasomotor symptoms

- **Data** on timing, duration, and correlations with clinical outcomes were **limited**
- **Conflicting data** on the relationship between the **occurrence** of treatment-induced VMS and **disease relapse** were identified

Key research questions #3 and #4:
What are the humanistic and economic burdens of treatment-induced VMS?

- Treatment-induced VMS adversely affect **quality of life,** particularly among those undergoing **tamoxifen** treatment
- **Gaps in the available evidence** were identified for:
  - **Economic burden**
  - **Treatment patterns**
  - Treatment-induced VMS-associated **breast cancer treatment discontinuation**
  - **Correlations** of treatment-induced VMS with other clinical measures

Key research questions #5: *What are the real-world treatment patterns and guideline recommendations for treatment-induced VMS?*

- **Very few studies** provided information on the **current real-world management** of treatment-induced VMS for breast cancer patients
- There is a general **lack of appropriate investigation and intervention** to reduce the burden of treatment-induced VMS
  - Some studies reported a benefit associated with the use of **acupuncture** on frequency and severity of VMS in this population