

The Impact of Hormonal Therapy on Autologous Microvascular Breast Reconstruction: A Systematic Review and Meta-analysis

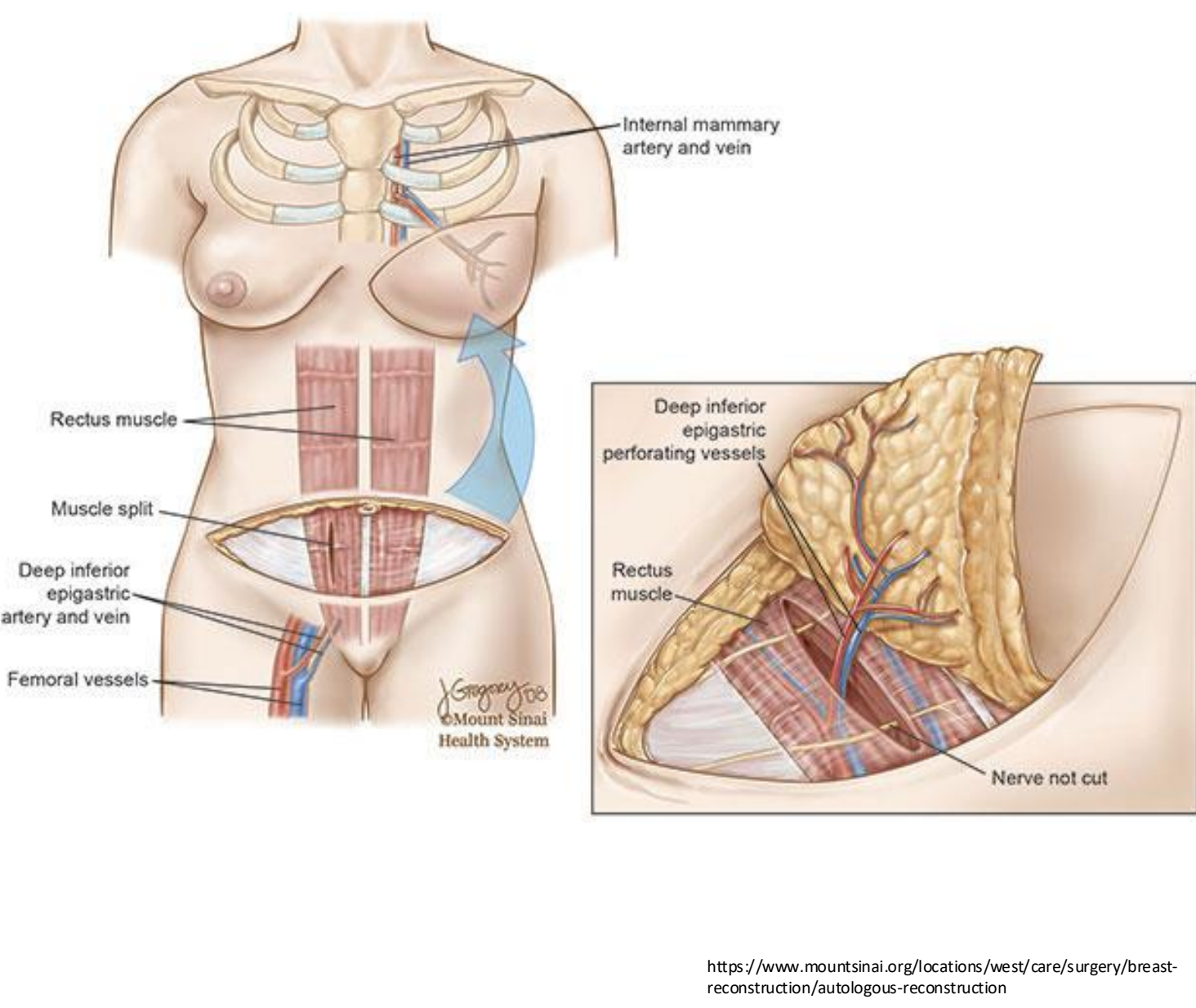
Miroslava Verbat MS; Gauthier Zinner MS; Edward T.C. Dong; Carlo M. Oranges MD, PhD

1. Introduction

Hormonal therapy (HT) is pivotal in managing hormone receptor-positive breast cancer.

HT includes **selective estrogen receptor modulators (SERMs)** and/or **aromatase inhibitors (AIs)**.

HT raises concerns, particularly regarding **venous thromboembolic (VTE)** risk and its potential impact on **flap viability**.



2. Aim of the study & Methods

Provide a comprehensive and updated assessment of all existing evidence on complications associated with AMBR in patients receiving all types of HT in comparison to control groups.

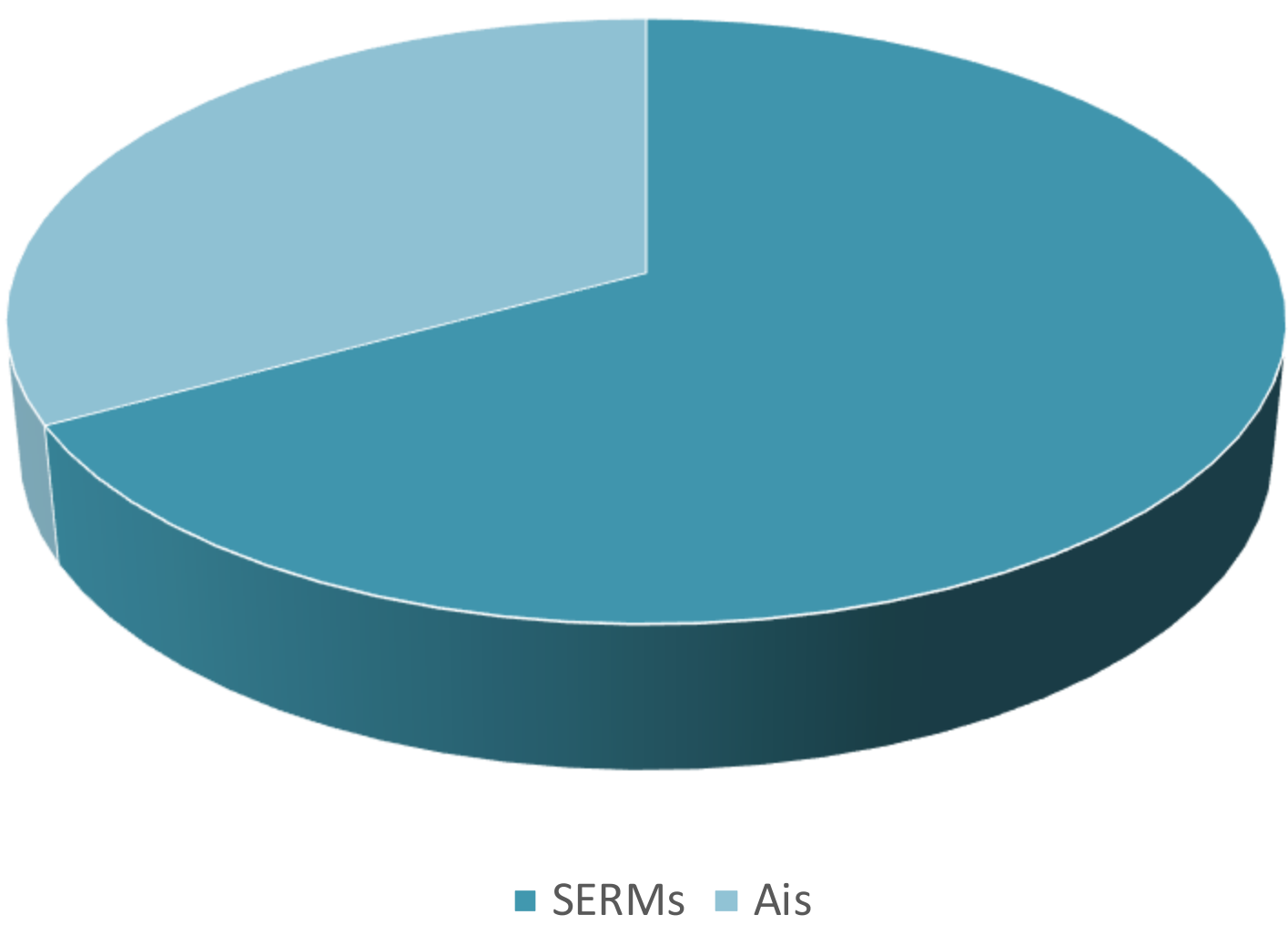
- **Systematic review and meta-analysis** of MEDLINE, Cochrane Library, Embase, and Web of Science
- Independent review and selection by 2 authors (MV, GZ)
- Assessor of disagreement (CMO)

3. Selection criterias

Table 2. Selection Criteria		
PICOS	Inclusion Criteria	Exclusion Criteria
Population	Adult female patients	Cadaver, animal, or experimental models
Intervention	Patient undergoing autologous breast reconstruction with any type of HT	Other breast reconstruction techniques
Comparator	Patient without HT	—
Outcomes	Flap and/or postoperative complications	—
Studies	All observational and experimental studies including prospective and retrospective cohort studies and randomized clinical trials, in English	All observational studies and clinical trials, as well as case reports, editorials, commentaries, abstracts, and letters to the editor, pediatric populations, cadaveric specimens, or animal models

4.a Results

- **8 studies included**
- **5087 flaps in 3789 patients**
- **731 patients received SERMs**
- **359 patients received AIs**
- **DIEP predominantly**



5. Conclusion

- Our study shows that microvascular postoperative complications after autologous breast reconstruction **do not differ significantly between patients who received HT versus those who did not**.
- Importantly we need to mention that **SERMS increased the risk of systemic VTE also in the context of breast reconstruction** and therefore we would like to highlight the importance of disclosing it during the discussion on reconstructive technique with patients.

4b. Results

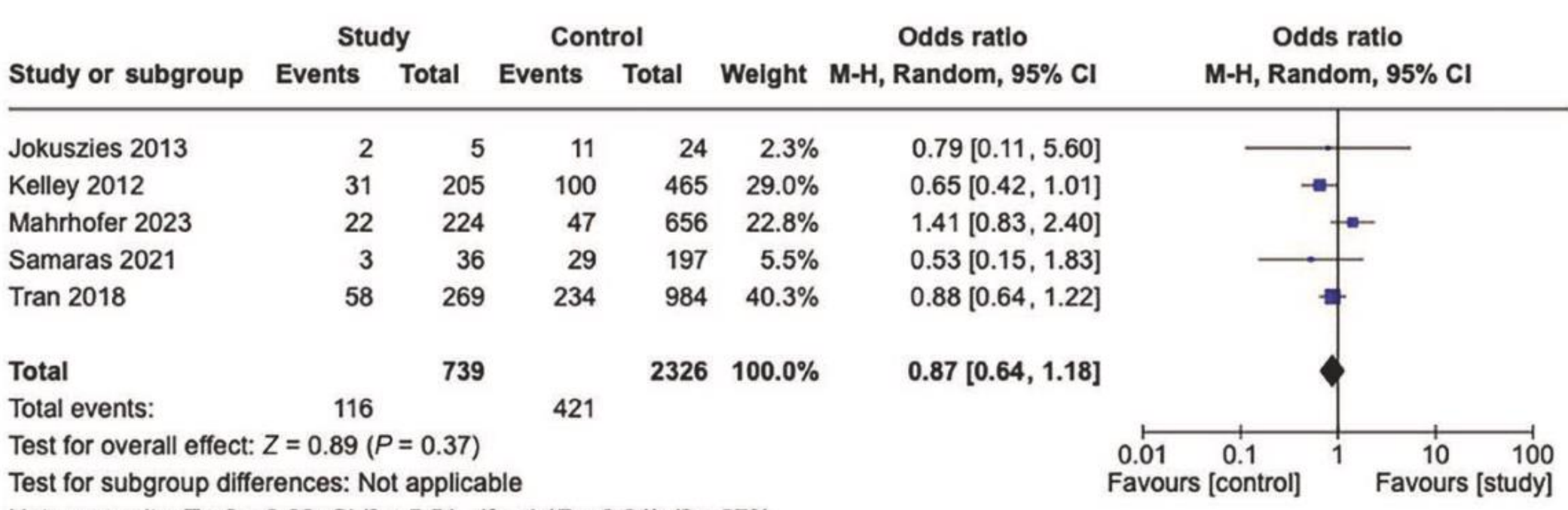


Fig. 2. Overall flap complications: HT vs controls. M-H, Mantel-Haenszel.

Our results found no statistically significant difference in all flap complications rate between the study and control group.

Complications	SERMs			AIs		
	OR	95% CI	P	OR	95% CI	P
Systemic VTE	5.08	1.38–18.72	0.01	0.87	0.34–2.22	0.78
Total flap loss	1.81	0.56–5.82	0.32	0.93	2.54–1.26	0.88
Partial flap loss	0.82	0.42–1.61	0.57	0.24	0.05–1.26	0.09
Flap fat necrosis	1.32	0.91–1.92	0.14	*	*	*
Pedicle arterial thrombosis	1.53	0.51–4.58	0.44	*	*	*
Pedicle venous thrombosis	1.11	0.40–3.31	0.84	*	*	*
Any flap thrombosis	1.03	0.64–1.66	0.91	*	*	*

*Data not calculated.

We also conducted a subgroup analysis which indicated that the systemic VTE rate was significantly higher in the SERMs group compared with the AI group (OR = 5.34; 95% CI 1.32–21.61; P = 0.02)

4. Limitations

- Most studies have not performed subgroup analysis
- Retrospective design : small sample sizes and carrying a potential selection bias
- Lack of consensus on the perioperative management of HT