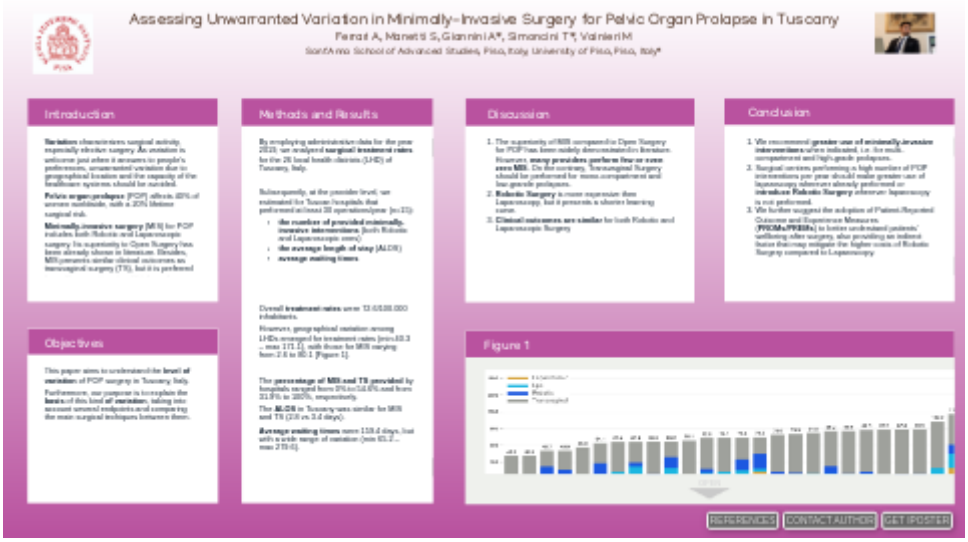
Assessing Unwarranted Variation in Minimally-Invasive Surgery for Pelvic Organ Prolapse in Tuscany



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PRESENTED AT:

INTRODUCTION

Variation characterizes surgical activity, especially elective surgery. As variation is welcome just when it answers to people's preferences, unwarranted variation due to geographical location and the capacity of the healthcare systems should be avoided.

Pelvic organ prolapse (POP) affects 40% of women worldwide, with a 20% lifetime surgical risk.

Minimally-invasive surgery (MIS) for POP includes both Robotic and Laparoscopic surgery. Its superiority to Open Surgery has been already shown in literature. Besides, MIS presents similar clinical outcomes as transvaginal surgery (TS), but it is preferred for multi-compartment and high-grade prolapses.

OBJECTIVES

This paper aims to understand the **level of variation** of POP surgery in Tuscany, Italy.

Furthermore, our purpose is to explain the **basis** of this kind **of variation**, taking into account several endpoints and comparing the main surgical techiques between them.

METHODS AND RESULTS

By employing administrative data for the year 2019, we analyzed **surgical treatment rates** for the 26 local health districts (LHD) of Tuscany, Italy.

Subsequently, at the provider level, we estimated for Tuscan hospitals that performed at least 30 operations/year (n=15):

- **the number of provided minimally-invasive interventions** (both Robotic and Laparoscopic ones)
- **the average length of stay** (ALOS)
- **average waiting times**

Overall **treatment rates** were 72.6/100.000 inhabitants.

However, geographical variation among LHDs emerged for treatment rates (min 40.3 – max 171.1), with those for MIS varying from 2.6 to 80.1 [Figure 1].

The **percentage of MIS and TS provided** by hospitals ranged from 0% to 54.6% and from 31.9% to 100%, respectively.

The **ALOS** in Tuscany was similar for MIS and TS (2.8 vs 3.4 days).

Average waiting times were 159.4 days, but with a wide range of variation (min 65.2 – max 279.6).

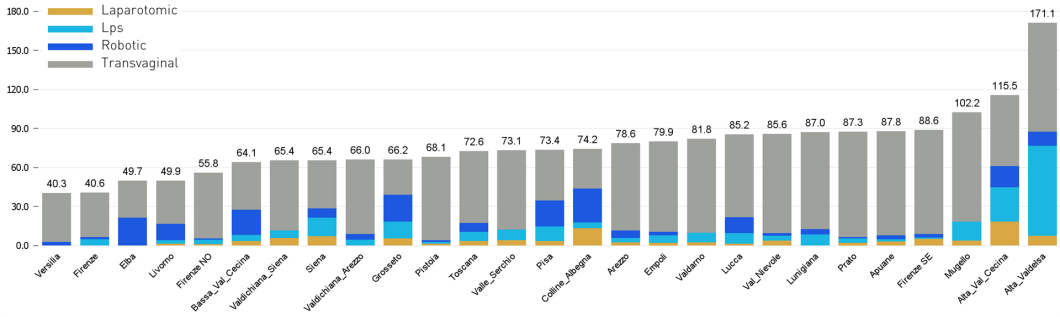
DISCUSSION

1. The superiority of MIS compared to Open Surgery for POP has been widely demonstrated in literature. However, **many providers perform few or even zero MIS**. On the contrary, Transvaginal Surgery should be performed for mono-compartment and low-grande prolapses.
2. **Robotic Surgery** is more expensive then Laparoscopy, but it presents a shorter learning curve.
3. **Clinical outcomes are similar** for both Robotic and Laparoscopic Surgery

CONCLUSION

1. We recommend **greater use of minimally-invasive interventions** when indicated, i.e. for multi-compartment and high-grade prolapses.
2. Surgical centers performing a high number of POP interventions per year should make greater use of laparoscopy wherever already performed or **introduce Robotic Surgery** wherever laparoscopy is not performed.
3. We further suggest the adoption of Patient-Reported Outcome and Experience Measures (**PROMs/PREMs**) to better understand patients' wellbeing after surgery, also providing an indirect factor that may mitigate the higher costs of Robotic Surgery compared to Laparoscopy.

FIGURE 1



SURGICAL TREATMENT RATES

for the 26 Local Health Districts (LHDs) of Tuscany, Italy,

computed on the resident population,

expressed as rate per 100.000 inhabitants

["Toscana" indicates the avarage treatment rate for the entire Tuscany Region]

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