Abnormal Uterine Bleeding in Brazil: Comparison of 52mg LNG-IUS and Hysterectomy

Ricardo Saad[1]; Victor Rosell[1]; Mariana Aguila[1]

[1]Bayer S.A., São Paulo, Brazil

Background & Rationale

Menorrhagia, also known as heavy menstrual bleeding, is a condition of abnormal uterine bleeding (AUB) characterized by blood loss greater than 80 mL per cycle or by the perception of excessive menstrual bleeding that compromises a woman's physical, social, emotional, and material aspects besides quality of life. In Brazil, it is estimated that this condition affects approximately 35% of women between the ages of 18 and 45.[1] In addition, it is the leading cause of iron deficiency anemia in women of reproductive age, which in turn impacts productivity, physical performance, and patients' sexual lives[2].

Treatment options for idiopathic menorrhagia include both medical and surgical approaches; the choice depends on factors such as the patient's age, history of therapeutic failure, presence of contraindications, and desire for pregnancy[3]

Although hysterectomy is considered a curative treatment for menorrhagia, it is an invasive and mutilating procedure with limited therapeutic indication, mainly due to surgical contraindications, patient preference, and fertility implications, making it a viable option for only a small portion of patients with menorrhagia.[3] In this context, a large number of patients who do not respond to oral and injectable pharmacologic treatment remain without adequate disease control within the Brazilian public health system (SUS), continuing to suffer from its multiple impacts. The 52mg LNG-IUS (levonorgestrel-releasing intrauterine system) is a medical alternative for the treatment of heavy menstrual bleeding, that leads to endometrial atrophy, with an effectiveness in reducing bleeding from 79% to 97%, and it is associated with high patient satisfaction and improved quality of life[3-5]. Compared to hysterectomy, LNG-IUS is a less invasive, fertility-preserving, and clinically effective option, making it a valuable alternative for managing idiopathic menorrhagia[6,7]

Objectives

To describe hysterectomy rates among women of reproductive age across Brazilian states and its capitals, and to compare the estimated costs of hysterectomy versus 52mg LNG-IUS for the treatment of AUB within the Brazilian public health system (SUS).

Methods

Hysterectomies data

Number of hysterectomies (per hospitalization site) performed in 2024 were obtained from DATASUS, the Brazilian public health database. The following procedures were assumed to be related to AUB (code – procedure name): 0409060100 - Vaginal hysterectomy; 0409060127 - Subtotal hysterectomy; 0409060135 - Total hysterectomy; 0409060151 - Laparoscopic hysterectomy.[8]

Costs

All costs were converted to US Dollars with an exchange rate of USD 1 = BRL 5.40.[9]

52mg LNG-IUS: Brazilian government maximum price (PMVG) with 18% tax from 2024 was considered in the analysis: USD 223.[10]

Hysterectomies: Filho *et al*. (2016)[11] calculated hysterectomy costs based on hospital services and medical fees using data from DATASUS[12]. We used the same procedure codes and updated the values for those that had changes, in order to calculate a hysterectomy cost that would reflect, at least in part, the expenditures of the Brazilian public health system (SUS) for the year of 2024. It was considered the estimated funding amount from the federal level alone, which could be even higher if the costs at the state and municipal levels were also taken into account.. The estimated cost of the hysterectomy was USD 522.

Equations

Hysterectomy rate:

$$Hysterectomy\ Rate = \left(\frac{H}{W}\right) \times 10{,}000$$

Possible healthcare savings:

$$Savings = (H \times C_H) - [(H \times C_{IUS}) + (H \times r \times C_H)]$$

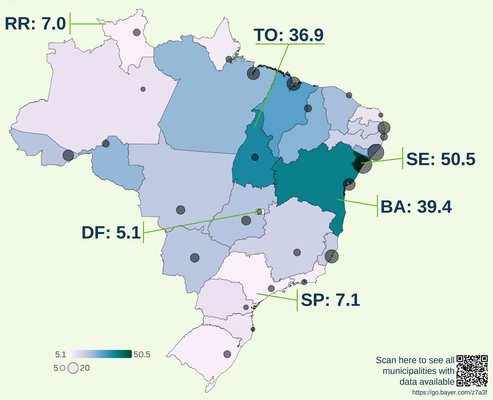
H : number of hysterectomies initially indicated due to abnormal uterine bleeding (AUB)
W : Number of women between 15 and 49 years old per location (considered to be at reproductive age)
C_H : Estimated cost of a hysterectomy
C_{IUS} : Cost of the 52 mg LNG-IUS
r : proportion of women who, after LNG-IUS insertion, still may require hysterectomy (24%)[13]

Results

Hysterectomy rate

The Brazilian state with the highest rate of hysterectomies among women of reproductive age was Sergipe, while the Federal District had the lowest rate. Among the country's capital cities, Aracaju had the highest rate, whereas Florianópolis had the lowest. **The national median across all municipalities with data was 22.7 hysterectomies per 10,000 women of reproductive age.**

Figure 1. Hysterectomy rate per 10,000 women of reproductive age



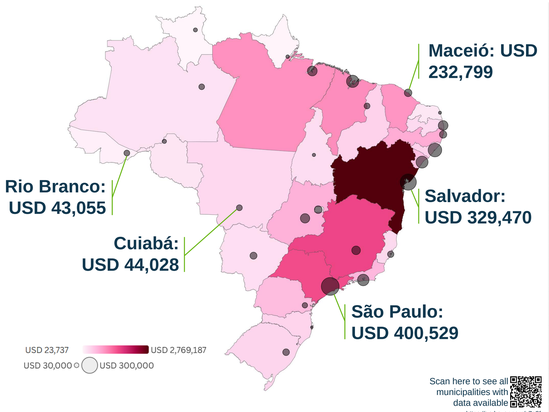
Scan here to see all municipalities with data available
https://go.bayer.com/z7a3f

State	Rate	State capital	Rate
Sergipe	50.5	Aracaju	58.0
Bahia	39.4	Salvador	25.9
Tocantins	36.9	Palmas	8.1
Maranhão	29.8	São Luís	33.7
Alagoas	24.8	Maceió	47.7
Piauí	24.7	Teresina	9.7
Rondônia	23.4	Porto Velho	9.3
Pará	23.3	Belém	17.9
Ceará	21.5	Fortaleza	5.8
Goiás	19.8	Goiânia	15.3
Acre	19.5	Rio Branco	21.6
Mato Grosso do Sul	19.4	Campo Grande	14.3
Mato Grosso	18.6	Cuiabá	13.5
Espírito Santo	17.2	Vitória	32.8
Minas Gerais	16.3	Belo Horizonte	8.6
Pernambuco	16.2	Recife	9.3
Paraíba	16.1	João Pessoa	27.6
Paraná	11.2	Curitiba	4.4
Amazonas	10.9	Manaus	3.6
Rio Grande do Norte	10.8	Natal	3.5
Santa Catarina	9.9	Florianópolis	3.1
Amapá	8.5	Macapá	6.6
Rio de Janeiro	8.0	Rio de Janeiro	8.0
Rio Grande do Sul	7.4	Porto Alegre	9.2
São Paulo	7.1	São Paulo	7.3
Roraima	7.0	Boa Vista	8.9
Distrito Federal	5.1	Brasília	5.1

Possible healthcare savings

In 2024, a total of **90,196 hysterectomies** potentially indicated for AUB were performed in Brazil, resulting in expenditures exceeding **USD 47.1 million**. If all of these hysterectomies had been replaced with 52mg LNG-IUS insertions, the total cost would have been USD 20.1 million. Assuming conservatively that 24% of women with the 52mg LNG-IUS might still go on to undergo hysterectomy (at an additional cost of USD 11.3 million), **an overall savings of USD 15.7 million would still be expected**.

Figure 2. Possible healthcare savings with the use of 52mg LNG-IUS



Scan here to see all municipalities with data available
https://go.bayer.com/z7a3f

State	Savings (USD)	State capital	Savings (USD)
Bahia	2,769,187	Salvador	329,470
Minas Gerais	1,552,848	Belo Horizonte	95,247
São Paulo	1,484,632	São Paulo	400,529
Maranhão	1,006,527	São Luís	190,043
Pará	973,506	Belém	121,006
Ceará	938,387	Fortaleza	72,782
Pernambuco	727,004	Recife	68,216
Goiás	680,204	Goiânia	110,896
Rio de Janeiro	620,674	Rio de Janeiro	167,730
Paraná	587,653	Curitiba	37,364
Sergipe	557,551	Aracaju	180,460
Piauí	388,549	Teresina	44,028
Alagoas	380,162	Maceió	232,799
Santa Catarina	361,817	Florianópolis	8,686
Rio Grande do Sul	353,805	Porto Alegre	57,057
Mato Grosso	332,014	Cuiabá	44,028
Espírito Santo	318,686	Vitória	51,518
Paraíba	307,978	João Pessoa	119,582
Tocantins	271,212	Palmas	14,002
Mato Grosso do Sul	253,617	Campo Grande	62,525
Amazonas	223,439	Manaus	41,783
Rondônia	191,092	Porto Velho	23,362
Rio Grande do Norte	174,019	Natal	12,431
Acre	83,191	Rio Branco	43,055
Distrito Federal	75,103	Brasília	75,103
Amapá	32,798	Macapá	16,323
Roraima	23,737	Boa Vista	21,041

Conclusions

Brazil is a country of continental dimensions, with significant disparities in access to healthcare services. **These inequities are reflected in the regional variation in the number of hysterectomies performed for AUB**.

While states like São Paulo and Minas Gerais present lower hysterectomy rates per 10,000 women of reproductive age, they still represent **considerable potential for cost savings** due to the high absolute number of procedures. Conversely, states such as Tocantins, despite **higher hysterectomy rates**, show less financial impact due to lower procedure volumes.

Although AUB is managed at the municipal level within Brazil's public health system (SUS), some **state health departments have issued technical guidelines supporting the use of the 52mg LNG-IUS for AUB treatment**, in addition to its use as contraception.

An important gap in available data relates to wait times for hysterectomy. Based on information obtained through Brazil's Access to Information Law (*Lei de Acesso à Informação*), the average wait time was 56 days. However, specialists within SUS indicate **that waiting times may reach up to 6 years in certain regions, leaving many women without access to effective treatment for prolonged periods**[14].

References

1. Santos IS et al. Menstrual bleeding patterns in women aged 18–45 in Southern Brazil. BMC Womens Health. 2011;11:26; **2.** Fraser IS et al. Heavy menstrual bleeding prevalence and patient experiences in Europe. Int J Gynecol Obstet. 2015;128(3):196–200 **3.** Hall EM et al. Etiology of heavy menstrual bleeding in adolescents: systematic review and meta-analysis. BMC Womens Health. 2024;24:136; **4.** Hurskainen R et al. Levonorgestrel-releasing IUS vs. hysterectomy for menorrhagia: 5-year outcomes. *JAMA*. 2004;291(12):1456; **5.** Bofill Rodriguez M et al. Interventions for heavy menstrual bleeding: Cochrane overview and network meta-analysis. *Cochrane Database Syst Rev*. 2022;5:CD013180; **6.** Abu Hashim H. Medical treatment of idiopathic heavy menstrual bleeding: evidence-based update. *Arch Gynecol Obstet*. 2013;287(2):251–60; **7.** Girum T, Wasie A. Return of fertility after stopping contraception: systematic review and meta-analysis. *Contracept Reprod Med*. 2018;3:9; **8.** Ministério da Saúde. SIH/SUS: dados dos procedimentos 0409060100, 0409060127, 0409060135, 0409060151 (2024); **9.** Banco Central do Brasil. Cotações dólar 2024. Disponível em: https://www.bcb.gov.br/estabilidadefinanceira/historicocotacoes; **10.** Anvisa/CMED. Lista de preços de medicamentos – 2024. Brasília: Anvisa, 2024; **11.** Da Silva Filho A et al. Tratamento do sangramento uterino anormal: análise de custos no SUS e na saúde suplementar. Rev Bras Ginecol Obstet. 2016;31(1):31–36; **12.** Ministério da Saúde. DATASUS – SIGTAP. Disponível em: https://sigtap.datasus.gov.br; **13.** A. Z. Goni et al. Gynecological Endocrinology, 2009; 25(9): 581–586; **14.** Conitec. 138ª Reunião Ordinária – Comitê de Medicamentos (13 mar. 2025). Disponível em: https://youtu.be/az1jSLpra3w?list=PLb2QyzHEnaQBNhA9SmS0IsfQ37v6OOYfT&t=2854.

Contact the author for more detailed information about the data/results