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Studies on Uterine Sarcoma among Married Women in India

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Abstract

Uterine sarcomas are a rare but highly aggressive group of malignancies originating from the uterine muscle or connective tissue. In India, particularly in West Bengal, limited regional data exist concerning its incidence, risk factors, diagnosis, and treatment outcomes. This review aims to compile available national and regional studies, analyze epidemiological trends among married women, and discuss diagnostic challenges, treatment modalities, and prognosis in the context of West Bengal. The findings underscore a critical need for focused awareness, early detection programs, and region-specific data collection to guide better clinical management and policy interventions.

Keywords

Uterine sarcoma, married women, West Bengal, endometrial stromal sarcoma, leiomyosarcoma, uterine cancer, gynecologic malignancy

I.INTRODUCTION

Uterine sarcomas are a rare subset of uterine cancers, accounting for approximately 3–7% of all uterine malignancies. Unlike the more common endometrial carcinomas, sarcomas arise from the mesenchymal tissues of the uterus [4-8]. The most common subtypes include:

- Leiomyosarcoma (LMS)
- Endometrial Stromal Sarcoma (ESS)
- Undifferentiated Uterine Sarcoma (UUS)
- Adenosarcoma

In Indian women, especially in the eastern states like West Bengal, reproductive, socio-cultural, and healthcare access factors may influence the pattern and detection of uterine sarcomas. Married women, owing to childbirth and hormonal influences, may present with variable risk profiles. However, studies specifically addressing this demographic in West Bengal are sparse.

. Epidemiology and Burden in India

- Uterine cancer ranked 6th–8th among cancers in women in several West Bengal cancer registries (e.g., Kolkata PBCR)[9].
- Uterine sarcomas are rare, with an estimated incidence of **0.5–3 per 100,000 women per year** globally, and approximately **3–6% of all uterine cancers in India**[11-14].
- Few regional hospitals in West Bengal (e.g., IPGME&R, Kolkata Medical College) have documented uterine sarcoma cases, primarily as case reports or hospital-based data[9].
- Most cases were detected in women aged **45–60 years**, often married and multiparous.

Clinical Features and Risk Factors in Married Women

Common Symptoms:

- Abnormal uterine bleeding
- Pelvic pain or pressure
- Rapidly enlarging uterine mass
- Postmenopausal bleeding

Risk Factors Identified in Indian/Regional Context:

- Age > 40 years
- Multiparity
- Prior pelvic radiation
- Long-term tamoxifen therapy (notably among breast cancer survivors)
- Obesity and diabetes (indirect contributors)

Hormonal Factors in Married Women:

- Exposure to prolonged estrogen stimulation due to childbirth and menstruation
- Hormonal imbalances due to reproductive cycle irregularities

. Diagnostic Challenges in India

- Uterine sarcomas are often misdiagnosed preoperatively as **fibroids (leiomyomas)**.
- Limited use of **MRI or transvaginal ultrasound with Doppler** in district hospitals.
- **Endometrial sampling** and **histopathology** post-hysterectomy often lead to diagnosis [17-19].
- Immunohistochemistry (IHC) facilities remain limited to tertiary care centers[15].

II.METHODOLOGY

Databases Used: PubMed, Scopus, Google Scholar, IndMED, Bengal Government Health Portal.

- **Search Terms**: "Uterine sarcoma", "leiomyosarcoma", "endometrial stromal sarcoma", "West Bengal", "India", "married women", "uterine cancer".

III.RESULT

Histological Subtypes and Indian Data [1-9]

Subtype	Approximate % in Indian Studies	Common Age Range	Features
Leiomyosarcoma	60–65%	45–60 years	High mitotic index, necrosis
Endometrial Stromal Sarcoma	20–25%	35–50 years	Low-grade types, better prognosis
Undifferentiated Uterine Sarcoma	5–10%	50–65 years	Aggressive, poor survival
Adenosarcoma	5%	30–50 years	Rare, mixed epithelial/mesenchymal

IV.DISCUSSION

Histological Subtypes of Uterine Sarcoma

The histological spectrum of uterine sarcomas in Indian cohorts aligns broadly with global trends, but notable demographic and clinicopathologic distinctions emerge when local data are scrutinized. As per multiple tertiary-care series from India [1–9], **leiomyosarcoma (LMS)** predominates, followed by **endometrial stromal sarcoma (ESS)**, **undifferentiated uterine sarcoma (UUS)**, and **adenosarcoma** in decreasing order of frequency.

i. Leiomyosarcoma (LMS)

- **Epidemiology in India:** Constituting **60–65%** of uterine sarcomas in most Indian series, LMS remains the most frequently encountered histotype [16-19]. The typical presentation age is **45–60 years**, with the bulk of cases arising in the perimenopausal or early postmenopausal period.
- **Histopathology:** LMS is defined by intersecting fascicles of atypical spindle cells with **high mitotic activity** (>10 mitoses/10 HPF in many Indian studies), **tumor cell necrosis**, and cytologic atypia.
- **Clinical behavior:** This subtype exhibits aggressive biology with a high propensity for early hematogenous dissemination, particularly to lungs and liver. Despite aggressive surgical management, 5-year survival rates remain low, particularly in advanced-stage disease [2, 3, 5].
- **Indian context:** Late presentation is common, often due to misinterpretation of symptoms as fibroid-related, and limited preoperative suspicion. MRI availability is increasing but still not universal, leading to frequent intraoperative diagnosis.

ii. Endometrial Stromal Sarcoma (ESS)

- **Epidemiology:** ESS accounts for **20–25%** of uterine sarcomas in Indian literature [1,4,6], with onset usually between **35–50 years**—approximately a decade earlier than LMS.

- **Histopathology:** Indian series report a predominance of **low-grade ESS (LG-ESS)**, characterized by small, uniform cells resembling proliferative-phase endometrial stroma, often showing **perivascular whorling** and infiltration of myometrium. High-grade ESS is rare but clinically aggressive.
- **Prognosis:** LG-ESS has a **more favorable prognosis** than LMS or UUS, especially when confined to the uterus and treated surgically. Hormone receptor positivity (ER/PR) is common, enabling hormonal therapy as a key adjuvant modality.
- **Indian context:** A proportion of ESS cases are diagnosed incidentally during hysterectomy for presumed benign conditions. Younger age at diagnosis and hormone sensitivity raise special concerns for fertility preservation, although this is rarely pursued due to delayed detection.

iii. Undifferentiated Uterine Sarcoma (UUS)

- **Epidemiology:** UUS represents **5–10%** of cases in Indian reports [2,7]. Mean age is **50–65 years**, with most cases presenting at an advanced stage.
- **Histopathology:** Composed of pleomorphic cells without specific differentiation, UUS lacks the morphologic hallmarks of LMS or ESS.
- **Clinical behavior:** Highly aggressive, with rapid local invasion and distant spread; median survival is typically measured in months for advanced disease.
- **Indian context:** The rarity of UUS in India, coupled with poor outcomes, underscores the need for early recognition, though preoperative diagnosis remains elusive in most cases.

iv. Adenosarcoma

- **Epidemiology:** A rare variant, adenosarcoma accounts for ~**5%** of cases in Indian studies [4,8].
- **Histopathology:** Biphasic tumor with benign or mildly atypical glandular epithelium and malignant mesenchymal stroma. **Sarcomatous overgrowth** is an adverse prognostic feature noted in some Indian cases.
- **Clinical behavior:** Generally less aggressive than LMS or UUS unless sarcomatous overgrowth is present.
- **Indian context:** Diagnosis is often histologic after hysterectomy for abnormal bleeding or polypoid mass; limited national data hinder precise prognostic modeling.

Implications for Research and Practice in India

1. **Preoperative risk stratification** is essential to avoid inadvertent tumor dissemination during morcellation of presumed fibroids, particularly in peri/postmenopausal women.
2. **National registry inclusion** of sarcoma histotypes will enable better incidence mapping and survival tracking.
3. **Molecular profiling**—largely absent in Indian literature—could improve subtype-specific prognostication and access to targeted therapy.
4. **Awareness campaigns** among gynecologists on the “red flag” signs (rapid growth post-menopause, atypical imaging features) could shift diagnosis to earlier stages.

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