REUE | Review Article

First Meeting of the Committee to Study Women in Urgent and Emergency Health Care (MUEjeres I)

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The lack of a gendered view of health is one of the main causes of health inequality. The Spanish Society of Emergency Medicine (SEMES) created a Committee to Study Women in Urgent and Emergency Health Care (MUEjeres). The committee's first conference was held on March 24, 2023, in Malaga, Spain. Experts addressed gender-based differences in hospital emergency department care in such time-dependent conditions as stroke, atrial fibrillation, and acute coronary syndrome. Also addressed were differences in emergency management of pain. This paper reviews the following main conclusions drawn in the plenary talks, which combined both clinical experience and the scientific evidence base. Regarding stroke, gender-based differences in the rates of stroke code activation can help explain why the overall prognosis is worse in women, a hypothesis that merits further study. Multiple factors affect the higher prevalences in women of ischemic heart disease with nonobstructive coronary arteries, myocardial infarction with nonobstructive coronary arteries, and non-ST-elevation acute coronary syndrome. Given that clinical practice guidelines for these conditions base their recommendations on studies that enrolled few women, it is important to take a gender-based view when treating patients with this condicions. The presentation of atrial fibrillation in women leads to atypical symptoms such as weakness and fatigue, possibly explained by the various genetic, hormonal, electrical, anatomical, and structural differences between the genders. Likewise, these differences could explain variability in complications. Regarding dimensions of pain, a gender difference to consider is that sensory-discriminative components predominate in men whereas cognitive-evaluative and affective-motivational components predominate in women.

Keywords: Gender. Health care. Time-dependent diseases. Gender-based violence. Urgent care. Emergency health services.

MUEjeres: I Jornadas de la Comisión de estudio de la Mujer en Urgencias y Emergencias

La ausencia de la visión de la salud con perspectiva de género es una de las principales causas de inequidad en salud. En 2018, la Sociedad Española de Medicina de Urgencias y Emergencias (SEMES), fundó la Comisión de estudio de la Mujer en Urgencias y Emergencias: MUEjeres. El 24 de marzo de 2023, se celebraron en Málaga (Spain) las I Jornadas de la Comisión en las que expertas abordaron como temas centrales la diferente asistencia entre géneros identificada en los servicios de urgencias hospitalarios (SUH) en patologías tiempo-dependientes como el ictus, la fibrilación auricular (FA) y el síndrome coronario agudo (SCA). Por otro lado, se trataron en profundidad también las diferencias en el manejo del dolor en los SUH. En el presente artículo se exponen las principales conclusiones extraídas de las diferentes charlas magistrales, en las que se combinó experiencia clínica y evidencia científica. En el ictus, la diferencia entre géneros en las tasas de activación del Código Ictus podría contribuir a explicar el peor pronóstico general para la mujer. Estas diferencias deben de ser analizadas en profundidad. En la cardiopatía isquémica (CI) múltiples factores condicionan una mayor prevalencia de enfermedad coronaria no obstructiva en la mujer, SCA sin elevación de ST (SCASEST) e infarto de miocardio sin obstrucción coronaria (MINOCA). Las guías de práctica clínica basan sus recomendaciones terapéuticas en estudios realizados con escasa representación femenina. Por ello es imprescindible el abordaje de la CI en la mujer desde la perspectiva de género. En relación a la FA, su presentación clínica en ellas se caracteriza por más síntomas atípicos, como debilidad y fatiga. Las diferencias genéticas, hormonales, eléctricas, anatómicas y estructurales evidenciadas entre géneros podrían ayudar a explicar la variación en la incidencia, la prevalencia y las complicaciones asociadas con la FA. En cuanto al dolor, hay preponderancia de la dimensión sensorial-discriminativa en los hombres y un mayor dominio del componente cognitivo-evaluativo y afectivo-motivacional en las mujeres.

Palabras clave: Género. Asistencia sanitaria. Patologías crono-dependientes. Violencia de género. Urgencias. Emergencias.

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In the 1970s, differences in health care delivery between genders were highlighted—an issue now known as "the gender paradox in health".[1] The literature shows differences between sexes both in disease occurrence and in treatment per se. For example, in the 1990s, 80% of the drugs withdrawn in the United States were removed due to adverse effects occurring in women.[2] The low representation of women in clinical trials, among other factors, has clear consequences for the treatment of various conditions.

The clinical presentation of several conditions, such as acute coronary syndrome (ACS),[3] may lead to diagnostic delays and result in increased morbidity and mortality among female patients. The lack of a gender-based health perspective is one of the main causes of inequity in healthcare.[4]

Acute urgent disease and women

In 2018, the Spanish Sociuety of Emergecy Medicine (SEMES) founded the Committee for the Study of Women in Emergency Medicine: MUEjeres.[5] On March 24th, 2023, the committee held its 1st Conference in Málaga (Spain), addressing key topics such as gender-based care gaps in time-dependent conditions including stroke, atrial fibrillation (AF), and ACS. Other areas explored included gender differences in pain management and gender-based violence, as well as its detection and approach in emergency departments (EDs).

The event lasted an entire morning and was organized into two expert roundtables and a concluding session.

This article presents the main conclusions drawn from the expert lectures, which combined clinical experience with scientific evidence.

Stroke and women

Stroke is a lethal and disabling disease, affecting more than 15 million people worldwide every year.[6] There are clear differences in severity and prognosis between men and women. In fact, stroke is the leading cause of death among women in Spain. As women age, their risk of stroke increases more than men of the same age (17% vs 15%).[7] Women also present greater recurrence, partly due to longer life expectancy and differences in clinical presentation, care, and prognosis.

The origin of these differences has been debated: whether they stem solely from biological factors, such as sex-dependent responses to cerebral ischemia—known as "sex dimorphism"[8]—or from other classical explanations such as the neuroprotective effect of estrogens, with pregnancy, postpartum, and menopause representing particularly vulnerable periods.[9]

Evidence on sex-based differences in clinical stroke presentation is limited.[10] Women tend to present more generalized symptoms and fewer classic signs than men do. These atypical presentations contribute to delays in seeking help, diagnostic delays, and reduced chances of receiving effective treatment.

Women tend to minimize symptoms and generally have poorer baseline health-related quality of life, along with higher disability scores, resulting in less benefit from reperfusion therapy.[9] Differences in Stroke Code activation ratesbetween genders may explain the overall poorer prognosis in women.[11] These disparities must be thoroughly examined to guide changes that reduce gender-related inequities.[12]

Ischemic heart disease and women

Cardiovascular diseases are the leading cause of death among women worldwide. Despite an overall decline in mortality from ischemic heart disease (IHD), the absolute number of deaths in women continues to rise.

Sex and gender characteristics explain differences in the initial diagnosis and treatment of ACS, significantly influencing prognosis. Research projects such as GENESIS-PRAXY,[14] VIRGO,[15] and WISE,[16] among others, have analyzed these disparities.

Traditional cardiovascular risk factors—including obesity, hypertension, diabetes, smoking, and chronic kidney disease[15]—carry greater weight in women. Additionally, unique female-related risk factors (hormonal influences) and non-traditional risks such as depression, psychosocial stress, and anxiety frequently trigger acute ischemic events. Women also exhibit a more intense vascular stress response. Atherosclerotic involvement tends to be diffuse, with lower plaque burden, and ACS mechanisms often involve plaque erosion. Consequently, women have higher rates of non-obstructive coronary disease, non-ST-segment elevation acute coronary syndrome (NSTEACS), and myocardial infarction with non-obstructive coronary arteries (MINOCA).

Chest pain is the most frequent symptom in both sexes. However, women more often present with accompanying symptoms such as abdominal pain, dyspnea, anxiety, and atypical radiation patterns. Painless ST-segment elevation acute coronary syndrome (STEMI) is also more prevalent among women, especially older than 65 years. Women often fail to associate these symptoms with an emergency, leading to longer prehospital delays, compounded by health-system bias.[17]

A recent study by Miró *et al.*[18] found that certain characteristics increase the likelihood of misclassifying chest pain as non-ischemic in EDs. Furthermore, clinical practice guidelines base therapeutic recommendations on studies with poor female representation.

Regarding treatment, revascularization carries higher morbidity and mortality in women[19] due to smaller, more tortuous vessels with greater complication risk.

Prognosis worsens particularly in women with painless STEMI,[20] women younger than 60 years, and those who are hypertensive, diabetic, smokers, obese, or dyslipidemic. Female gender roles and personality traits are associated with higher recurrence rates, and adverse events are more severe in ACS than in men. Thus, more than biological sex, gender-related factors often determine outcomes, underscoring the need to approach IHD in women through a gender perspective.

Atrial fibrillation and women

AF is the most common sustained cardiac arrhythmia in men and women worldwide. Overall, women have a lower age-adjusted incidence and prevalence of AF than men. However, due to women's longer life expectancy, the absolute number of men and women with AF is similar.[22]

AF is independently associated with a 2-fold increase in all-cause mortality in women vs a 1.5-fold increase in men,[23] and with a higher risk of stroke—even in patients anticoagulated with warfarin—where women have a 3-fold higher relative risk.[24] AF is therefore an independent risk factor for stroke, especially in older adults. Thus, AF can be confirmed as a stronger risk factor for cardiovascular disease and death in women than in men, and it is associated with poorer outcomes.[25]

Regarding clinical presentation, women develop AF at an older age and are more likely to exhibit atypical symptoms such as weakness and fatigue.[23] Genetic, hormonal, electrical, anatomical, and structural differences between genders may help explain variations in incidence, prevalence, and AF-related complications.[26]

Sex-based inequities in AF management also exist. Women are significantly less likely to receive anticoagulation therapy and are treated more conservatively: they undergo less rhythm-control treatment, less electrical cardioversion, and fewer pulmonary vein ablations.[27]

Across major anticoagulation trials published to date, women are markedly underrepresented, accounting for only about 35% of participants vs 65% men.[28,29]

We emphasize that the current knowledge gaps must be addressed in future studies to improve AF management in women, ensuring equitable representation of both sexes in upcoming clinical trials.

Pain and women

When approaching pain through a gender perspective, the starting point must be the definition of pain per se: "Pain is an unpleasant sensory and emotional experience associated with, or resembling that associated with, actual or potential tissue damage."[30] This definition includes considerations such as personal experience, biological, psychological, and social factors—among which gender, womanhood, societal roles, and specific pathophysiology are inherently included. Pain is the main reason for consultation in EDs, estimated to be present in 78% of urgent visits.[31]

Among the major advances in pain research during the 20th century, differences in pain expression between men and women were highlighted, as well as psychological and social determinants linked to gender roles.[32]

Unconscious biases among health care professionals—rooted in historical constructs and inequalities—also play a role.

Scientific evidence has identified neurophysiological differences, with women showing greater responses to analgesia and stress, and increased pain hypersensitivity.[33] Moreover, women exhibit anatomical and physiological differences, including a larger hippocampus, differing activation of the amygdala and prefrontal cortex, and lower affinity of corticosteroid receptors. Estrogen, progesterone, and other gonadal hormones have complex roles in inflammatory processes and pain response, producing changes in pain threshold, perception, tolerance, and analgesic response.[34]

Social factors influencing pain responses include traumatic childhood experiences, violence, displacement, loss, devaluation of female roles, and unattainable ideals of femininity and masculinity—all contributing to inequality.

In the comprehensive study of pain through a gender lens, the Melzack Neuromatrix Model[35] must be considered, describing multiple dimensions of pain. It has been noted that men display predominance of the sensory-discriminative dimension, whereas women show greater dominance of the cognitive-evaluative and affective-motivational components.

Table 1. Best Practices in Emergency Departments and Emergency Medical Services

- Understand sex-based pathophysiological differences in time-dependent conditions.
- Incorporate a gender perspective in the diagnosis and management of these conditions.
- Ensure proportional inclusion of women in clinical trials.
- Train and promote training among health care professionals.

Conclusions

Scientific evidence supports the need to implement a gender perspective in routine clinical practice in EDs and in Emergency Medical Services (EMS) (Table 1).

Anatomical and physiological differences, along with differing treatment responses, contribute to atypical clinical presentations that delay care. In our specialty—where many conditions are time-dependent—these delays may lead to critical errors. Added to this is the tendency of women to minimize symptoms, as well as long-standing biases within social and health care systems (Table 2).

Table 2. Main gender differences in time-dependent conditions

Stroke	• Higher prevalence > 65 years. • Estrogen protective effect; sex dimorphism. • Lower representation in clinical trials. • Symptom minimization. • Health care bias.
Ischemic heart disease	• Greater impact of traditional risk factors (hypertension, smoking, obesity). • Specific hormonal risk factors. • Stronger vascular stress response. • More frequent trigger mechanism: plaque erosion. • Atypical clinical presentation (abdominal pain, dyspnea, absence of pain). • Symptom minimization and delayed care.
Atrial fibrillation	• Onset at older ages. • Atypical symptoms (fatigue, dyspnea). • Health care bias (less anticoagulation, greater reliance on rate control strategies).
Pain	• Specific perceptual factors linked to social and gender roles. • Different amygdala activation. • Neurophysiological differences: greater pain hypersensitivity. • Response influenced by estrogen and progesterone. • Predominance of cognitive-evaluative and affective-motivational components. • Health care bias.

The psychological component is fundamental in managing various conditions, considering women's historical roles and the stigma of caregiving or motherhood, which may delay medical consultation and negatively impact time-dependent conditions and pain.

Of note, the low representation of women in clinical trials, contributing to gaps in the safety and efficacy data of various treatments.

Therefore, standardized training of emergency professionals with a gender perspective is essential, demonstrating the commitment of emergency clinicians to eliminating inequity within the health care system.

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