Trauma Epidemiology of Women in Puerto Rico, 2002–2011

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Objective: Recent literature has suggested that trauma is heterogenic and that physiological response to it differs between sexes. The study represented in this manuscript aimed to describe gender differences in the mortality rates of trauma patients at the Puerto Rico Trauma Hospital (PRTH).

Materials and Methods: This was a cross-sectional study performed at PRTH. A total of 14,874 injured patients admitted to the hospital from 2002 to 2011 were included in the sample and divided into 2 groups, based on sex. Pearson's chi-square test was employed for categorical variables and the Mann–Whitney U test for continuous ones. A logistic regression model was undertaken to estimate the association between gender and study outcomes, after adjusting for confounders. A p-value lower than 0.05 was an indication of statistical significance. IRB approval was received.

Results: The most common injury areas for women were the chest (32.50%), followed by the extremities (25.83%) and the head/neck (21.51%). Road traffic collisions (RTCs) (45.08%), falls (19.62%), and pedestrian accidents (16.08%) were the most common injury mechanisms for women. The highest frequency of RTC injuries (57.52%) among females occurred in patients who were from 18 to 39 years old. Females 65 years old and older exhibited the highest frequency of falls (39.78%) and pedestrian injuries (25.14%). Males 17 years and under were more likely to have an Injury Severity Score (ISS) of 15 or greater (AOR = 1.56; 95% CI: 1.19–2.03) than were their female counterparts; and, overall, males were more likely to have a Glasgow coma score (GCS) under 9 (AOR = 1.30; 95% CI: 1.11–1.53) than females were. Despite these results, there were no differences between gender mortality rates (AOR = 1.04; 95% CI: 0.86–1.25).

Conclusion: Our results suggest that there is no sex dimorphism conferring protection on females. Future studies should be conducted to assess this issue. [*P R Health Sci J 2017;36:159-164*]

Key words: Epidemiology, Women, Trauma, Mortality

For decades, clinical investigations have focused on the outcomes of traumas sustained specifically by men, perhaps partly because of the fact that, worldwide, three quarters of deaths from road traffic injuries, four fifths of deaths from homicide, and nine tenths of deaths from war occur among men (1). However, recent literature has shown that trauma is heterogenic and that the physiological response differs between sexes, highlighting the necessity to assess the female population in that regard.

Evidence from animal models indicates that female mice with high concentrations of estrogen have a better survival rate than their male counterparts do after sepsis and hemorrhagic shock (2–4). Nevertheless, whether or not women are afforded some level of protection over men has become a subject of debate among the scientific community because of the inconsistent nature of the clinical research findings. Emerging data suggest that women have an up to 21% higher survival rate than men do after trauma (5, 6). According to the hormonal theory, the protection conferred on women is lost with increasing age (7–9). As a matter of fact, George et al. (8) found that women 50 years old and older with penetrating injuries had a lower survival rate than did their male counterparts (8).

However, the reduced mortality rate experienced by women could potentially be explained as well by the mechanisms of trauma (9–11). Women are more likely to suffer blunt injuries than penetrating traumas, whereas men present a very high

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prevalence of the latter, which usually have greater lethality (7, 9, 12–15). This, in turn, is related to the lower Injury Severity Scores (ISS: an anatomical scoring system that provides an overall score for patients with multiple injuries, which correlates with mortality and other measures of severity) and higher Glasgow coma scales (GCS: a neurological scoring system used to assess conscious level after head injury) exhibited by female patients (9, 13, 16, 17). Furthermore, an alternative explanation for the observed phenomenon could lie in the number of complications, since women often have fewer (6, 12, 18, 19). Other studies, meanwhile, have concluded that there are no statistically significant gender differences with regard to mortality, overall (9, 12, 20–22).

Another determinant factor as to the gender gap in mortality is a given patient's race/ethnicity. This factor has been identified as an effect-modifying variable of the association between gender and trauma-related deaths. Sperry et al. (5), for instance, demonstrated that Asian female patients have a 41% lower independent risk of mortality than do Asian male patients, but this sex dimorphism was not observed in members of black or Hispanic subgroups (5).

Differences in sex-based outcomes following trauma remain unclear, primarily because of the scarcity of clinical investigations and the inconsistency of the results of those that have been undertaken. The largest knowledge gap seems to exist for underserved racial/ethnic minority groups, including Hispanic populations. Therefore, the current study aimed to describe gender mortality differences of trauma patients at Puerto Rico Trauma Hospital (PRTH), which serves, by virtue of its location, Hispanic populations, almost exclusively.

Materials and Methods

Since 1989, PRTH has been the only specialized unit in the Caribbean for citizens suffering traumatic injuries, thereby most of the mechanisms of trauma can be treated only in this center. It is a teaching hospital that has formal collaboration agreements with the University of Puerto Rico Medical Sciences Campus, and it is run by attending physicians and residents. It provides acute trauma care to the entire population of PR, which is estimated to be 3,725,789 inhabitants. The hospital operates 24/7 and admits over 1,500 critically injured patients a year.

This was a cross-sectional study performed with the total of injured patients admitted to the hospital from 2002 through 2011 (N=14,874). Patient case files that did not specify the sex of the patient were excluded, reducing the number of participants to 14,863. Then, the sample was divided into 2 groups based on sex. Data were collected from the trauma registry belonging to the United States National Trauma Registry System.

Information on patients was classified into 9 categories: sociodemographic variables (age and sex), mechanism of injury, trauma time period (trauma hour, day, and season), mode of transport, drug consumption, physiological variables (ISS , GCS , breathing, temperature, heart rate, base, and blood transfusion), area of injury (head/neck, chest, abdomen, and extremities), length of stay (mechanical ventilation [MV] days, trauma intensive care unit [TICU] days, and length of stay [LOS] in hospital), and mortality. Injury severity was determined using the Abbreviated Injury Scale (AIS); injuries with an AIS of 2 or more were considered to be significant.

Data were summarized as medians (interquartile range [IQR]) or percentage [%]). Pearson's chi-square test was employed to compare categorical variables, and the Mann–Whitney U test was used for continuous variables. This latter test was chosen because the Shapiro–Wilk normality test reached statistical significance.

To estimate the magnitude of the association between gender and the study outcomes (ISS, GCS, and mortality), a binary logistic regression model was used, with the sample group of female patients being used as the reference category. A Cox proportional hazards regression model was used to assess the predictive effect of gender on the risk of death. All of these regression analyses were performed adjusting for those confounders that were statistically significant in the bivariate analysis. The study outcomes were presented stratified by age group.

The statistical software package used to carry out all analyses was Stata version 13 for Windows. A p-value lower than 0.05 was an indication of statistical significance. The study described herein received approval from the Institutional Review Board of the Medical Sciences Campus of the University of Puerto Rico.

Results

Of the total number of patients admitted to PRTH during the study period, 16.36% (n = 2,431) were women. The highest frequency of admission for female patients was observed among those aged 18 to 39 years old (41.02%). Proportionally more injuries were sustained by women who were 17 years of age and younger and by those who were older than 64 years of age than were sustained by their male counterparts (17.43% and 15.15% vs. 10.04% and 7.86%, respectively) (Table 1).

As seen in Figure 1, road traffic collisions (RTCs) (45.08%) and falls (19.62%) were the most common mechanisms of injury for women, overall. In the age-stratified analysis, it can be seen that women 17 years old and younger more often suffered RTCs (30.97%) or falls (22.66%). Those aged 18 to 39 years exhibited the highest prevalence of RTC-related injuries (57.52%) and gun shot–related injuries (GSWs) (32.40%). Furthermore, RTCs (42.16%) and pedestrian accidents (22.73%) were the most common mechanisms of injury for women in the age range of 40 to 64 years. The oldest age group (≥ 65 years), meanwhile, had the highest rates of fall-related traumas (39.78%) and pedestrian-related injuries (25.14%).

The occurrence of injuries increased from 9 PM to 4 AM, though there were no statistically significant differences between genders ($p = 0.207$). However, women presented more traumas on weekdays than men did (55.14% vs. 51.51%; $p = 0.001$); a greater proportion of female than male patients were transported to the hospital by air ambulance (13.67% vs. 11.75%; p<0.001). Moreover, women used less ethanol (8.51% vs. 11.83; p<0.001), marijuana (5.32% vs. 12.57%; p<0.001), and cocaine than men did (5.47% vs. 12.67; p<0.001) (Table 1).

As depicted in Table 2, injuries to the chest (32.50%), extremities (25.83%), and head/neck (21.51%) were the most prevalent for women. Males presented similar patterns. Nevertheless, women sustained fewer abdominal injuries (15.18% vs.18.16%; p<0.001) and chest traumas (32.50% vs. 35.37%; p = 0.007). Along with this, a lower percentage of female than male patients was found to have a severe/critical ISS (≥25) (28.81% vs. 31.94%; p = 0.001) and a severe GCS (<9) (10.22% vs. 12.00%; p = 0.055). Additionally, a smaller percentage of women than men arrived at the hospital with abnormal heart rates: bradycardia (2.54% vs. 5.24%; p<0.001) and tachycardia (31.63% vs. 32.28%; p<0.001). Female patients also had lower prevalences than did their male counterparts of hypoventilation (2.13% vs. 2.54%; p<0.001) and hyperventilation (29.18% vs. 33.27%; p<0.001), but showed an increased incidence of base deficit (77.33% vs. 74.49%; p = 0.009).

Table 3 shows the estimates of the magnitude of the association between gender and the study endpoints, after controlling for confounders. Overall, men were 1.30 (95% CI: 1.11, 1.53) times more likely to have a GCS lower than 9 than were women. Interestingly, this excess risk increased with age. Likewise, males 17 years of age and younger were found to have a higher risk of having an ISS greater than or equal to 15 (AOR = 1.56; 95% CI: 1.19–2.03) than were their female counterparts. Meanwhile, women exhibited a significantly lower in-hospital mortality rate than did men (9.55% vs. 10.76%; p = 0.036) in the bivariate analysis. However, when a multivariate model adjusted by age, injury mechanism, GCS, and ISS was employed, there was no association between gender and in-hospital mortality (AOR = 1.04; 95% CI: 0.86, 1.25). Similarly, gender had no predictive effect with respect to the risk of dying after trauma (AHR = 0.95; 95% CI: 0.80, 1.13).

Table 1. Descriptions of sociodemographic characteristics, time period in which the trauma occurred, mode of transport, and drug-use status of the patients, by gender

Sex	Male n = 12,432	Female n = 2,431	p
Characteristic			
Age (years)			
≤17	1,240 (10.04%)	421 (17.43%)	<0.001
18–39	6,778 (54.90%)	991 (41.02%)	
40–64	3,358 (27.20%)	638 (26.41%)	
≥65	970 (7.86%)	366 (15.15%)	
	n = 12,346 (99.31%)	n = 2,416 (99.38%)	
Trauma mechanism			
Fall	1,840 (14.80%)	477 (19.62%)	<0.001
GSW*	2,760 (22.20%)	183 (7.53%)	
SW†	970 (7.80%)	103 (4.24%)	
RTC	4,273 (34.37%)	1,096 (45.08%)	
Pedestrian	1,261 (10.14%)	391 (16.08%)	
Other	1,328 (10.68%)	181 (7.45%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	
Trauma hours			
1 AM–4 AM	2,691 (21.70%)	503 (20.76%)	0.207
5 AM–8 AM	1,735 (13.99%)	307 (12.67%)	
9 AM–12 PM	1,532 (12.36%)	325 (13.41%)	
1 PM–4 PM	1,644 (13.26%)	337 (13.91%)	
5 PM–8 PM	2,008 (16.19%)	416 (17.17%)	
9 PM–12 AM	2,789 (22.49%)	535 (22.08%)	
	n = 12,399 (99.70%)	n = 2,423 (99.67%)	
Trauma day			
Weekday	6,399 (51.51%)	1,340 (55.14%)	0.001
Weekend	6,024 (48.49%)	1,090 (44.86%)	
	n = 12,423 (100.00%)	n = 2,430 (100.00%)	
Season			
Winter	3,161 (25.44%)	646 (26.58%)	0.108
Spring	3,298 (26.55%)	663 (27.28%)	
Summer	3,153 (25.38%)	560 (23.05%)	
Autumn	2,811 (22.63%)	561 (23.09%)	
	n = 12,423 (100.00%)	n = 2,400 (98.72%)	
Mode of transport			
Air	1,412 (11.75%)	322 (13.67%)	<0.001
Ground ambulance	10,447 (86.93%)	1,982 (84.16%)	
Private vehicle	135 (1.12%)	47 (2.00%)	
Official vehicle	24 (0.20%)	4 (0.17%)	
	n = 12,018 (96.73%)	n = 2,355 (96.87%)	
Drugs used			
Ethanol	467 (11.83%)	56 (8.51%)	<0.001
Marijuana	496 (12.57%)	35 (5.32%)	
Benzodiazepine	924 (23.42%)	159 (24.16%)	
Cocaine	500 (12.67%)	36 (5.47%)	
Opiate	405 (10.26%)	102 (15.50%)	
None	1,154 (29.24%)	270 (41.03%)	
	n = 3,946 (31.74%)	n = 658 (26.08%)	

*GSW = gunshot wound; †SW = stab wound

Discussion

Male populations have been widely examined in trauma research. However, a number of studies focusing on gender mortality have revealed uneven results. Several such studies reported on the existence of a degree of protection apparently being conferred on female patients, though others found no mortality differences between genders (5, 6, 9, 12, 20–22). Based on these findings, numerous hypotheses have been proposed to explain the apparent protection, which hypotheses posit the existence of some degree of hormonal protection and variations both in trauma mechanisms and in injury

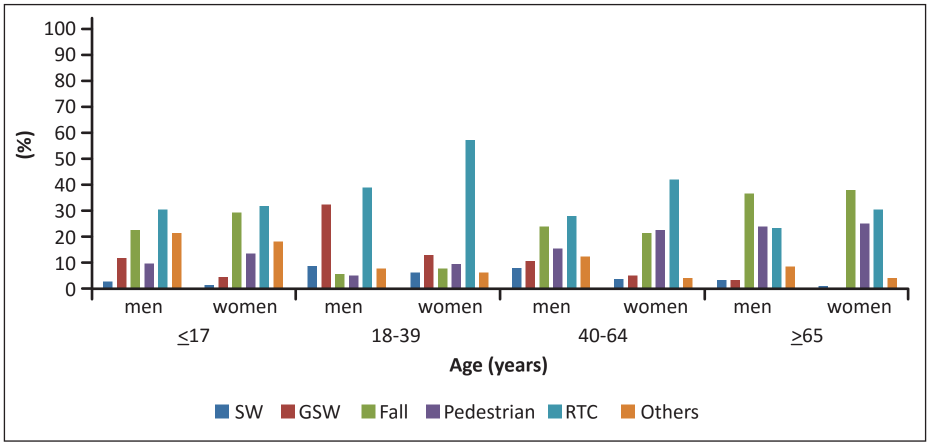

Figure 1. Prevalence of trauma mechanisms by sex and age

severity. Nevertheless, the effect of gender on an individual's response to trauma remains unclear.

As is the case in most trauma studies, pedestrian accidents and falls were the most common mechanisms of injury for women in the current investigation (12, 14–16). Interestingly, however, some researchers (associated with other studies) have reported disparate results in different countries, highlighting the variations in the prevalences

Table 2. Descriptions of the physiological measures, blood transfusion status, area of injury, and outcomes of the patients, by gender

Sex	Male n = 12,432	Female n = 2,431	p
Characteristic			
Rf			
Hypoventilation	297 (2.54%)	49 (2.13%)	<0.001
Hyperventilation	3,892 (33.27%)	670 (29.18%)	
Normal	7,509 (64.19%)	1,577 (68.68%)	
	n = 11,698 (94.10%)	n = 2,296 (94.45%)	
Temperature			
Hypothermia	645 (5.39%)	117 (4.99%)	0.280
Fever	147 (1.23%)	21 (0.90%)	
Normothermia	11,168 (93.38%)	2,205 (94.11%)	
	n = 11,960 (96.20%)	n = 2,243 (92.27%)	
Heart rate			
Bradycardia	645 (5.24%)	61 (2.54%)	<0.001
Tachycardia	3,975 (32.28%)	760 (31.63%)	
Normal	7,696 (62.49%)	1,582 (65.83%)	
	n = 12,316 (99.07%)	n = 2,403 (98.85%)	
Base			
Deficit	9,260 (74.49%)	1,880 (77.33%)	0.009
Excess	730 (5.87%)	118 (4.85%)	
Normal	2,442 (19.64%)	433 (17.81%)	
	n = 12,432 (100.00%)	n = 2,431(100.00%)	
SBP			
<90mmHg	825 (6.74%)	163 (6.81%)	0.893
>90mmHg	11,423 (93.26%)	2,230 (93.19%)	
	n = 12,248 (98.51%)	n = 2,393 (98.43%)	
Blood transfusion			
Yes	1,231 (9.90%)	238 (9.79%)	0.866
No	11,201(90.10%)	2,193 (90.21%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	
Head/Neck injury			
Yes	2,686 (21.62%)	523 (21.51%)	0.920
No	9,746 (78.39%)	1,908 (78.49%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	
Abdominal injury			
Yes	2,258 (18.16%)	369 (15.18%)	<0.001
No	10,174 (81.84%)	2,062 (84.82%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	

Sex	Male n = 12,432	Female n = 2,431	p
Characteristic			
Chest injury			
Yes	4,397 (35.37%)	790 (32.50%)	0.007
No	8,035 (64.63%)	1,641 (67.50%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	
Extremity injury			
Yes	3,018 (24.28%)	628 (25.83%)	0.103
No	9,414 (75.72%)	1,803 (74.17%)	
	n = 12,432 (100.00%)	n = 2,431 (100.00%)	
ISS			
≥25	3,851 (31.94%)	683 (28.81%)	0.001
16–24	3,080 (25.55%)	599 (25.26%)	
10–15	1,572 (13.04%)	300 (12.65%)	
1–9	3,553 (29.47%)	789 (33.28%)	
	n = 12,056 (96.98%)	n = 2,371 (97.53%)	
Med.* (IQR)†	8 (14)	9 (14)	0.435
GCS			
<9	1,368 (12.00%)	230 (10.22%)	0.055
9–12	436 (3.82%)	89 (3.95%)	
13–15	9,596 (84.18%)	1,932 (85.83%)	
	n = 11,400 (91.70%)	n = 2,251 (92.96%)	
Med.* (IQR)†	15 (0)	15 (0)	0.068
MV Days			
Med.* (IQR)†	8 (18)	9 (19)	0.792
	n = 2,473 (19.81%)	n = 439 (18.06%)	
TICU Days			
Med.* (IQR)†	6 (19)	6 (19)	0.923
	n = 2,506(20.16%)	n = 459(18.81%)	
LOS			
Med.* (IQR)†	8 (14)	9 (14)	0.436
	n =11,954 (96.16%)	n = 2,344 (96.42%)	
Death			
Yes	1,366 (10.76%)	232 (9.55%)	0.036
No	11,062 (89.01%)	2,197 (90.45%)	
	n = 12,428 (99.97%)	n = 2,429 (99.92%)	

*Med .= median ; †IQR = interquartile range

Table 3. Estimation of the magnitude of the association between gender and study endpoints after controlling for confounders

Sex	GCS ≤8 AOR (CI 95%)	ISS ≥15 AOR (CI 95%)	Mortality AOR (CI 95%)	Survival AHR (CI 95%)
Overall				
Men*	1.30 (1.11, 1.53)†	1.09 (0.99, 1.20)§	1.04 (0.86, 1.25)††	0.95 (0.80, 1.13)††
≤17 years				
Men*	0.90 (0.62, 1.30)‡	1.56 (1.19, 2.03)**	1.04 (0.52, 2.06)‡‡	0.96 (0.48, 1.91)‡‡
18–40 years				
Men*	1.31 (1.03, 1.66)‡	1.01 (0.87, 1.17)**	0.92 (0.68, 1.23)‡‡	0.87 (0.65, 1.16)‡‡
41–64 years				
Men*	1.55 (1.10, 2.17)‡	1.13 (0 .94, 1.36)**	1.03 (0.73, 1.46)‡‡	0.98 (0.71, 1.37)‡‡
≥65 years				
Men*	1.73 (1.02, 2.94)‡	1.29 (0.98, 1.68)**	1.32 (0.91, 1.91)‡‡	1.09 (0.78, 1.52)‡‡

*Women were used as reference category; †adjusted for ISS, trauma mechanism, and age; ‡adjusted for ISS and trauma mechanism; §adjusted for GCS, trauma mechanism, and age; **adjusted for GCS and trauma mechanism; ††adjusted for GCS, ISS, trauma mechanism, and age; ‡‡adjusted for GCS, ISS, and trauma mechanism

of injury mechanisms according to geographical region (1). As regards injury severity, we found a significantly lower proportion of female compared to male patients with an ISS of 25 or greater and a GCS lower than 9. The literature has also shown gender differences in terms of ISS and GCS, with women tending to have lower ISSs and higher GCSs (9, 13, 16, 17, 20). Conversely, the LOSs in our analysis were similar between groups, while studies usually describe a longer LOS for men (12, 13, 20, 21, 23).

The gender gap in mortality is the most significant ongoing debate in trauma settings, to which debate our study can add the following evidence: our results showed no differences in mortality between sexes, after adjusting by age, injury mechanism, GCS, and ISS. But Haider et al. (6) noted that women have a 21% lower adjusted risk of death compared to men. They argued that the survival advantage exhibited by women may be related to a reduced susceptibility to developing life-threatening complications (6). Similarly, Sperry et al. (5) observed a lower mortality risk for women, but with variations across racial/ethnic groups. Caucasian female patients had an 8.5% and Asian female patients a 41% lower adjusted risk of mortality relative to their male counterparts, while no differences were found for Hispanics or blacks (5). George et al. (8), meanwhile, reported that males under 50 years who had sustained a blunt trauma had a 2.5 times higher risk of death than their female counterparts did, whereas those men equal to or older than 50 years who suffered penetrating injuries had a 90% survival advantage over women in the same age group (8). These 2 specific studies provide evidence about race/ethnicity, injury mechanisms, and age in terms of their roles as effect-modifying variables.

Contrarily, Schoeneberg et al. (12) performed a matched-pair analysis—matched by age, ISS, AIS, and cause of trauma—in which no statistically significant difference in mortality rate between genders was found. The authors noted, nevertheless, that women were more likely than men to die in the first days after trauma. On the other hand, their lower rate of sepsis ensured that women, more than men, had a better survival rate after extended hospital stays (12). In addition, Sperry et al. (19) demonstrated, through a Cox proportional hazard regression, that gender was an independent risk factor for multiple organ failure and nosocomial infection, conferring on women a 43% and a 23% lower risk, respectively. But, similar to our results, sex was not a risk factor for mortality in their analysis (19). Croce et al. (9), Gannon et al. (10), and Bowles et al. (11) also failed to find differences between gender mortality after trauma. They argued that variables such as age, race, social history, mechanism of injury and degree of injury severity, transfusions, respiratory rate, cardiac disease, and genetics all have stronger impacts than gender on trauma outcomes (9–11).

Our study overcomes many of the limitations observed in previous ones. For instance, some investigations have used a small sample size and others have performed only a bivariate analysis to evaluate differences between gender mortality. The current study used a large sample size, 14,863 subjects, along with appropriate statistical tests. Furthermore, those variables which consistently have emerged as significant predictors in the literature were considered in the analyses. Thus, the ISS, GCS, and injury mechanism were controlled for, and the results are presented stratified by age. With respect to race/ethnicity as a potential effect-modifying variable, our sample included only 1 racial/ethnic group, that consisting of Hispanics.

The current research has some shortcomings. The retrospective nature of the study necessitated that a preexisting database be used and that not all data were available for all participants (e.g., those regarding ISS and GCS), meaning that there may be information and selection biases. Furthermore, although Puerto Ricans are considered a Hispanic population, they constitute a significantly heterogeneous population compared to other ones. All of the above may have resulted in a dilution of the true strength of the association between exposure and disease.

The results from the current analysis do not provide a reasonable explanation for any sex-based differences that may exist in the Hispanic population with regard to mortality or the time elapsed between the initial moment of injury and death. Furthermore, this research does not support the hypothesis of hormonal protection for young women or that of an existing interaction effect with the mechanisms of trauma. Based on these findings and given that there is no indication of inherent protection conferred by sex, even though traumatic injuries are less common in women than in men, female trauma patients require a degree of clinical management that is as aggressive as that required by men. Future studies designed to address this issue in other populations should be extremely rigorous in the approach taken and should consider new variables that could lead to explaining the heterogeneity in the existing scientific literature on this subject. If future studies find differences in gender mortality, then these variables should be considered when determining the clinical management that admitted patients will receive.

Resumen

Objetivo: Estudios recientes sugieren que el trauma es heterogéneo y que la respuesta fisiológica al mismo varía por sexo. El objetivo del estudio fue describir las diferencias en mortalidad por sexo de los pacientes del Hospital de Trauma de Puerto Rico (PRTH, por sus siglas en inglés). Métodos: Se llevó a cabo un estudio transversal en el PRTH, el cual incluyó un total de 14,874 pacientes lesionados admitidos al hospital durante 2002-2011. Se usaron pruebas de Chi-cuadrado y Mann–Whitney para las variables categóricas y continuas, respectivamente. Un modelo de regresión logística se utilizó para asociar el sexo y las variables resultantes. Un valor de $p<0.05$ indicó significancia estadística. Este estudio recibió aprobación del IRB. Resultados: Las áreas más comunes de lesión para las mujeres fueron el pecho (32.50%), las extremidades (25.83%) y la cabeza/el cuello (21.51%). Los mecanismos de lesión más comunes en las mujeres fueron: accidentes de tránsito (45.08%), caídas (19.62%) y accidentes peatonales (16.08%). La frecuencia más alta de accidentes de tránsito (57.52%) ocurrió en mujeres de 18-39 años; y los porcentajes más altos por caídas (39.78%) y accidentes peatonales (25.14%) fueron en mujeres ≥65 años. Los hombres ≤17 años tuvieron mayor probabilidad de tener un ISS ≥15 (AOR=1.56; IC 95%, 1,19-2,03) y, en general, los hombres fueron más propensos a tener un GCS <9 (AOR=1,30; IC95%, 1,11-1,53). No obstante, no hubo diferencias en la mortalidad por sexo (AOR=1.04; 95% IC, 0.86-1.25). Conclusión: Nuestros resultados sugieren que no existe un dimorfismo sexual que les confiera protección a las mujeres. Se deben realizar estudios que evalúen esta controversia.

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