

Aspirin and the incidence of preeclampsia in pregnant women over 35 years old at Bella Vista Hospital: A retrospective cohort study from January 2017 to January 2022.

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INTRODUCTION

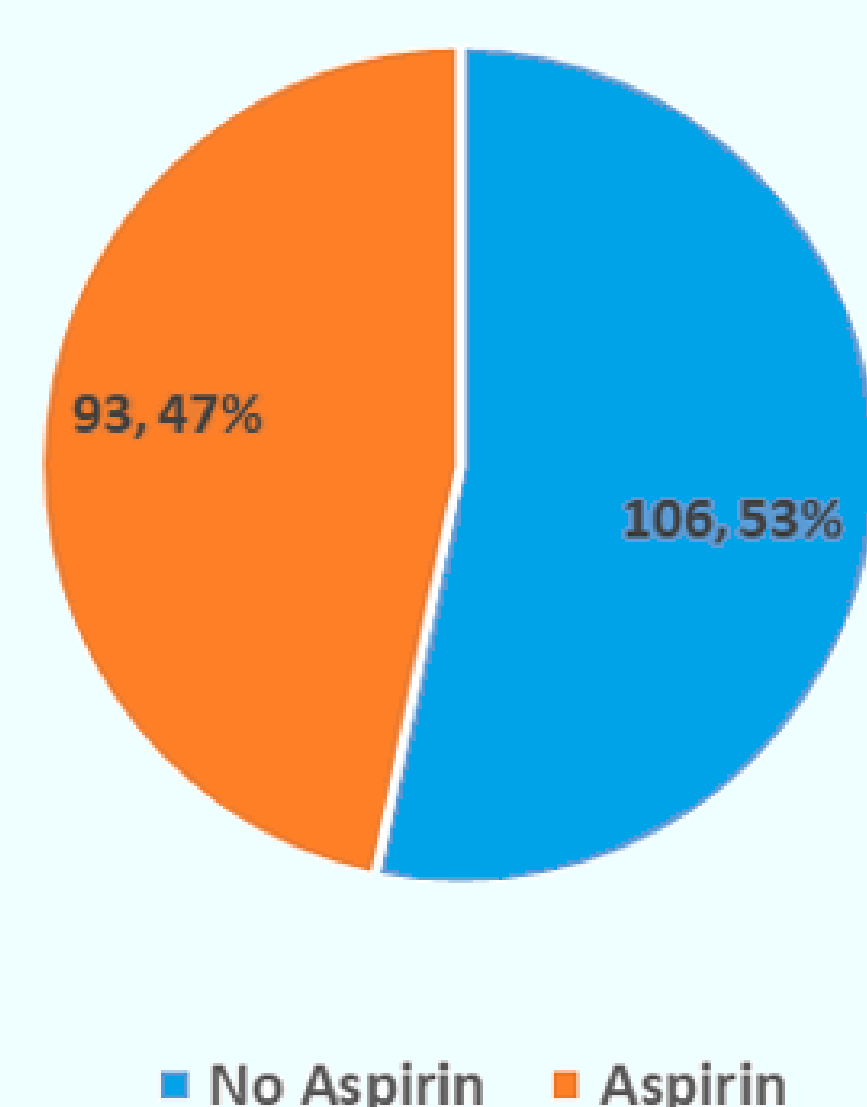
According to a statistical review, approximately 4.6 percent of all pregnancies worldwide are affected by preeclampsia. In the United States, the incidence rate is slightly higher at roughly 5 percent. These differences in incidence rates are due to variations in maternal age distribution and the proportion of nulliparous pregnant patients. The incidence of preeclampsia is on the rise, and this increase is likely due to population-level increases in risk factors for the disease. Late-onset preeclampsia, which occurs after 34 weeks of gestation, is more common than early-onset preeclampsia, which occurs before 34 weeks of gestation. (Wallis AB, Saftlas AF, Hsia J, Atrash HK)

METHOD

A review of patient records was conducted in compliance with HIPAA and institutional privacy protocols and the IRB's rules and conditions. The records of all patients admitted to Bella Vista Hospital's maternity unit in Mayaguez, Puerto Rico, with a pregnancy diagnosis between January 2017 and January 2022, was manually reviewed by researchers. The review will include factors such as age, number of pregnancies, chronic conditions, use of aspirin, and previous pregnancy complications. The collected data will be analyzed and tabulated to identify patterns of clinical interest that may warrant further investigation

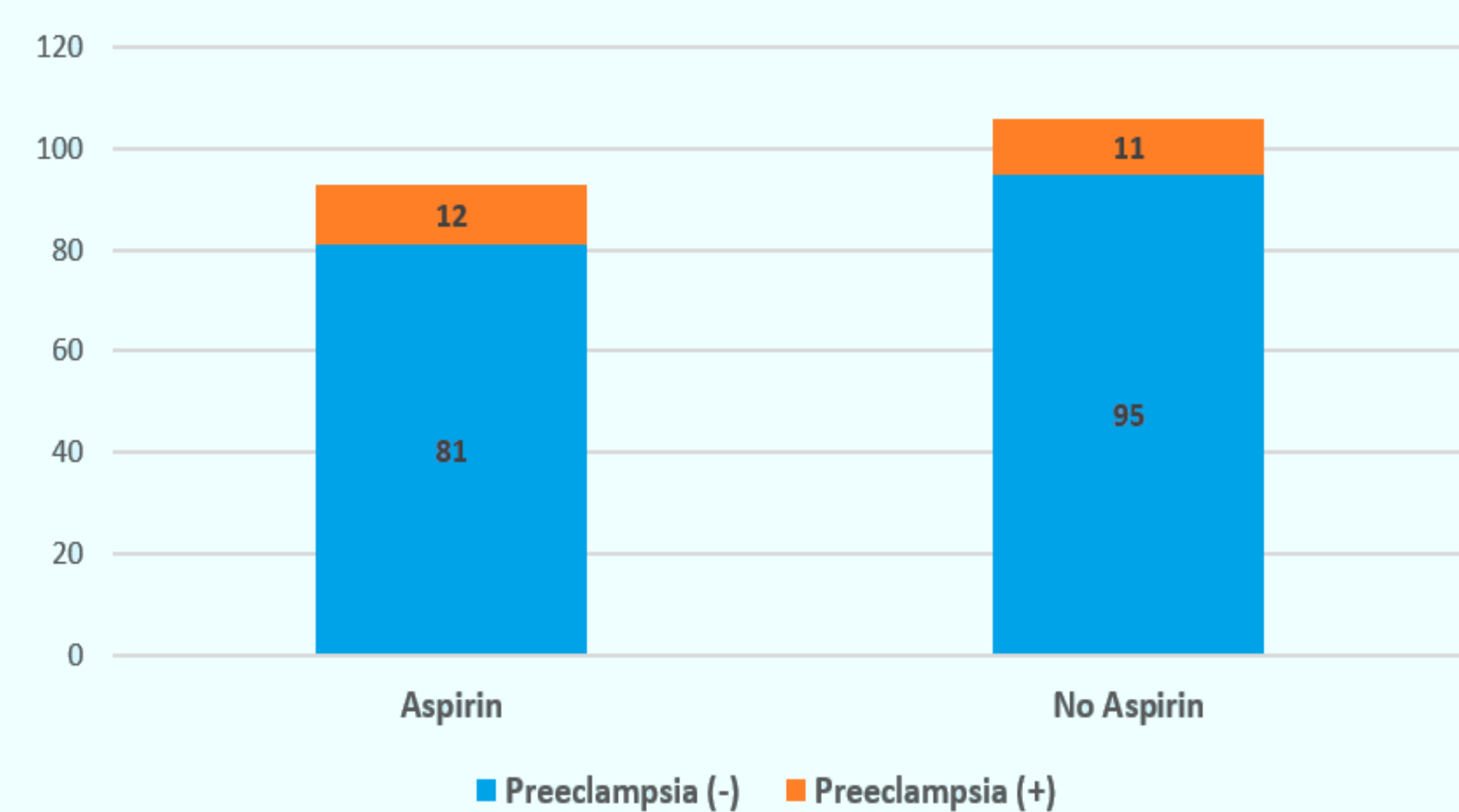
RESULTS

Figure 1: Distribution by Aspirin Use



RESULTS

Figure 2: Incidence of Preeclampsia by Aspirin Use



Relative Risk = 1.24 (95% CI: 0.58 to 2.68); X² = 0.308, p = 0.579

TABLE 1: Comparison Of Aspirin And No Aspirin Group

Variable	Aspirin - Mean (SD)	No Aspirin - Mean (SD)	Mean Difference (95% CI)	p
Age (Years)	37.3 (2.0)	37.7 (2.3)	-0.4 (-1.0 to 0.2)	0.237
Variable	Aspirin - N (%)	No Aspirin - N (%)	Prevalence Ratio (95% CI)	p
Primigravida	13 (14.0)	14 (13.2)	1.06 (0.52 to 2.13)	0.874
Chronic HTN	17 (18.3)	10 (9.4)	1.94 (0.93 to 4.02)	0.070
Gestational HTN	31 (33.3)	16 (15.1)	2.21 (1.29 to 3.77)	0.003
Chronic Kidney D	6 (6.5)	8 (7.5)	0.85 (0.31 to 2.37)	0.764
Diabetes Mellitus	5 (5.4)	5 (4.7)	1.14 (0.34 to 3.81)	0.832
Gestational DM	15 (16.1)	13 (12.3)	1.32 (0.66 to 2.62)	0.435

TABLE 2: Incidence Rates of Preeclampsia

Group (N)	Preeclampsia N (%)	Relative Risk (95% CI)	p
Primigravida (27)	4 (14.8)	1.34 (0.49 to 3.64)	0.570
No Primigravida (172)	19 (11.0)		
Chronic HTN (27)	6 (22.2)	2.25 (0.97 to 5.20)	0.063
No Chronic HTN (172)	17 (9.9)		
Gestational HTN (47)	14 (29.8)	5.03 (2.33 to 10.87)	<0.001
No Gestational HTN (152)	9 (5.9)		
Chronic Kidney D (14)	1 (7.1)	0.60 (0.09 to 4.13)	0.286
No Chronic Kidney D (185)	22 (11.9)		
Diabetes Mellitus (10)	2 (20.0)	1.80 (0.49 to 6.63)	0.730
No Diabetes Mellitus (189)	21 (11.1)		
Gestational DM (28)	1 (3.6)	0.28 (0.04 to 1.98)	0.155
No Gestational DM (171)	22 (12.9)		

TABLE 3: Multivariate Analysis; Adjusted Hazard Ratios for Preeclampsia*

Variable	Hazard Ratio	95% CI of HR	X ²	p
Age (1 year)	1.04	0.85 to 1.27	0.114	0.736
Aspirin	0.69	0.30 to 1.61	0.730	0.393
Primigravida	1.45	0.48 to 4.39	0.441	0.507
Chronic HTN	11.36	2.64 to 48.84	10.657	0.001
Gestational HTN	16.17	4.22 to 61.94	16.504	<0.0001
Chronic Kidney D	1.63	0.20 to 13.44	0.209	0.647
Diabetes Mellitus	2.76	0.62 to 12.23	1.796	0.180
Gestational DM	0.35	0.05 to 2.64	1.040	0.308

DISCUSSION

In the stated EMR search period, 199 patient records fit the inclusion criteria of being pregnant at the moment of admission, divided into two groups: 93 pregnant female patients using aspirin (ASA group) at the moment of admission and 106 patients that were not using aspirin (No ASA group), with a median age of 37 years old in both groups. Prevalence of first pregnancy was the same in both groups.

Hypertension prevalence was higher in the ASA group, with 18.3% vs. 9.4% in the non-ASA group. The prevalence of gestational hypertension (GHTN) is higher in the ASA group, with 33.3% vs 15.1%—similar prevalence of CKD and DM in both groups.

Gestational diabetes mellitus (GDM) was slightly elevated in the ASA group. As a result of this study, we found no significant difference in the incidence of preeclampsia in both groups. In the ASA group, preeclampsia incidence was 12.9% vs 10.4 in the non-ASA group for a 95% CI 0.58-2.6. There was no association between age and preeclampsia.

DISCUSSION

Primigravid patients had a higher risk of preeclampsia. Patients with chronic hypertension have had an increased incidence of preeclampsia compared with no hypertensive patients. Those on GHTN had five times the risk of preeclampsia for 29.8%. There is no statistically significant difference in the risk of preeclampsia from CKD. There is no statistically significant difference in the risk of preeclampsia due to DM. There is no statistically significant difference in the risk of preeclampsia from GDM. GDM patients had less preeclampsia. In the total EMR reviewed, only one patient developed Eclampsia, and no statistical analysis performed.

CONCLUSION

In conclusion, there was no association between age and the incidence of preeclampsia. The mean age of patients without preeclampsia was 37.5 years (SD = 2.2); the mean age of those who developed preeclampsia was 37.6 years (SD = 2.2)—the mean difference = 0.1 year (95% CI: -0.9 to 1.0). Aspirin did not significantly alter the risk of developing preeclampsia in these patients. The two factors most associated with preeclampsia were CHTN and GHTN.

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