

Maternal risk factors for preeclampsia and prescription practices of low dose aspirin for preeclampsia prophylaxis

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Introduction

- Hypertensive disorders of pregnancy are a major cause of maternal and perinatal morbidity and mortality worldwide. Several risk factors for preeclampsia have been identified by the United States Preventive Services Task Force (USPSTF), ACOG and SMFM.
- Prophylactic daily low dose aspirin (LDA) is recommended for patients with 2 or more moderate or at least 1 high risk factor for developing preeclampsia.

High-risk factors	Moderate-risk factors
<ul style="list-style-type: none"> • History of Preeclampsia • Chronic hypertension • Multifetal pregnancy • Diabetes mellitus, type 1 or 2 • Kidney disease • Autoimmune disease 	<ul style="list-style-type: none"> • Nulliparity • Obesity • Black race • Lower income • Personal history factors (low birthweight, small for gestational age, previous adverse pregnancy outcome, pregnancy interval >10 years) • Age ≥35 years old • Pregnancy conceived by in vitro fertilization

Objective

To determine how prophylactic low dose aspirin prescription rates differed across maternal risk factors for preeclampsia.

Methods

- **Retrospective, single center, cohort study** identified patients who met ACOG and SMFM criteria to LDA prophylaxis who received prenatal care at a single academic center between January 2021 – May 2021.
- **Exclusion criteria:** Maternal age <18 years old, delivery <20 weeks, transfer of care or initiation of prenatal care >28 weeks
- Patient characteristics, moderate risk and high-risk criteria, rate of LDA prescription to those with risk factors and pregnancy outcomes were collected.
- **Variables:** preeclampsia risk factor criteria, OB provider type, and LDA prescribing practices, timing of initial prenatal visit, and timing of LDA initiation
- **Statistical analysis:** Chi square and univariate analysis with significance defined as p < 0.05.

Table 1. Maternal Risk Factors Associated with Higher Aspirin Prescription Rates

Risk Factors	Prescribed Aspirin (n = 117)	Not Prescribed Aspirin (n = 258)	p-value
High Risk Factors			
Multifetal Gestation	15 (12.8%)	14 (5.4%)	0.013
History of Preeclampsia	36 (30.8%)	7 (2.7%)	<0.001
Chronic Hypertension	22 (18.8%)	5 (1.9%)	<0.001
Pregestational Diabetes Mellitus	9 (7.7%)	3 (1.2%)	0.002
Autoimmune Disease	17 (14.5%)	19 (7.4%)	0.029
Moderate Risk Factors			
Nulliparity	23 (19.7%)	116 (45%)	<0.001
Assisted Reproductive Technology (ART)	11 (9.4%)	6 (2.3%)	0.002

*Data presented as N (%)

References

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Results

- 60.3% of patients met criteria to initiate low dose aspirin prophylaxis with either 2 moderate risk factors or at least 1 high risk factor.
- Risk factors that were more likely to be prescribed low dose aspirin were a history of preeclampsia, chronic hypertension, pregestational diabetes, autoimmune disease, and APLS (Table 1). Other risk factors and pregnancy complications were not associated with more LDA use

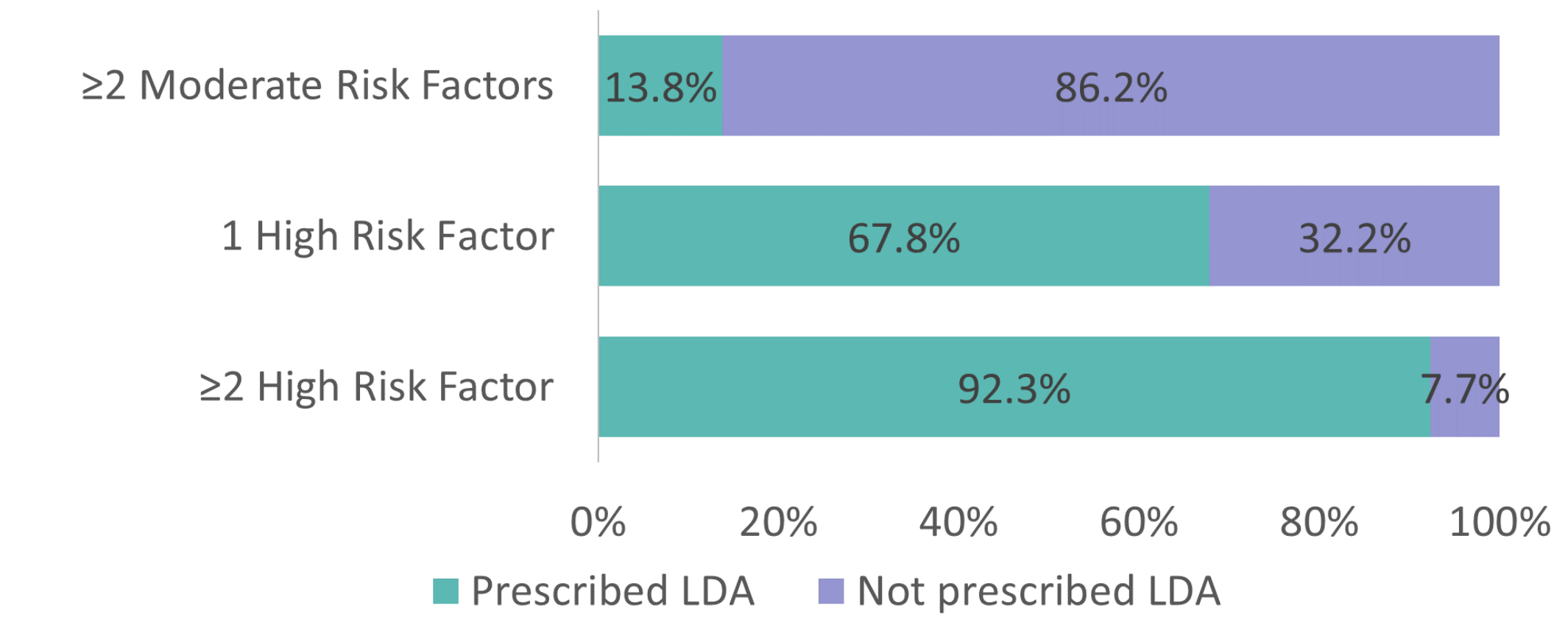


Figure 1. Rates of LDA prescription and maternal risk factors

Conclusion

- Patients with 2 or more high risk factors for preeclampsia were more likely to be appropriately prescribed LDA than patients with only 1 high risk factor or only moderate risk factors.
- Providers were more likely to recognize high risk factors for LDA recommendation than multiple moderate risk factors alone.

Patients with **2 or more high risk factors** for preeclampsia were more likely to be appropriately prescribed low dose aspirin than patients with only 1 high risk factor or only moderate risk factors.

