Likelihood of Shoulder Dystocia in Nondiabetic Patients with Birthweight ≥ 4000 Grams

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INTRODUCTION

Shoulder dystocia is a rare but dangerous obstetrical emergency. Known risk factors include macrosomia, gestational weight gain (GWG), and diabetes.

AIM

To evaluate the likelihood of shoulder dystocia in neonates ≥4,000g when combining excessive GWG with 1-hour glucose challenge test (GCT) ≥135mg/dL.

MATERIALS & METHODS

Type: Retrospective cohort

Population: 344 singleton, vaginal deliveries, birthweight ≥4,000g, non-diabetic (2019-2022)

Risk Groups:

1-hour GCT	Gestational weight gain: Normal	Gestational weight gain: Excessive
≥135 mg/dL	MODERATE	HIGH
<135 mg/dL	LOW	MODERATE

Group sizes (n = 344)

LOW	MODERATE	HIGH
n = 77	n = 215	n = 52

Analysis: Chi-square, Mantel-Haenszel trend test, logistic regression

REFERENCES/CONTACT

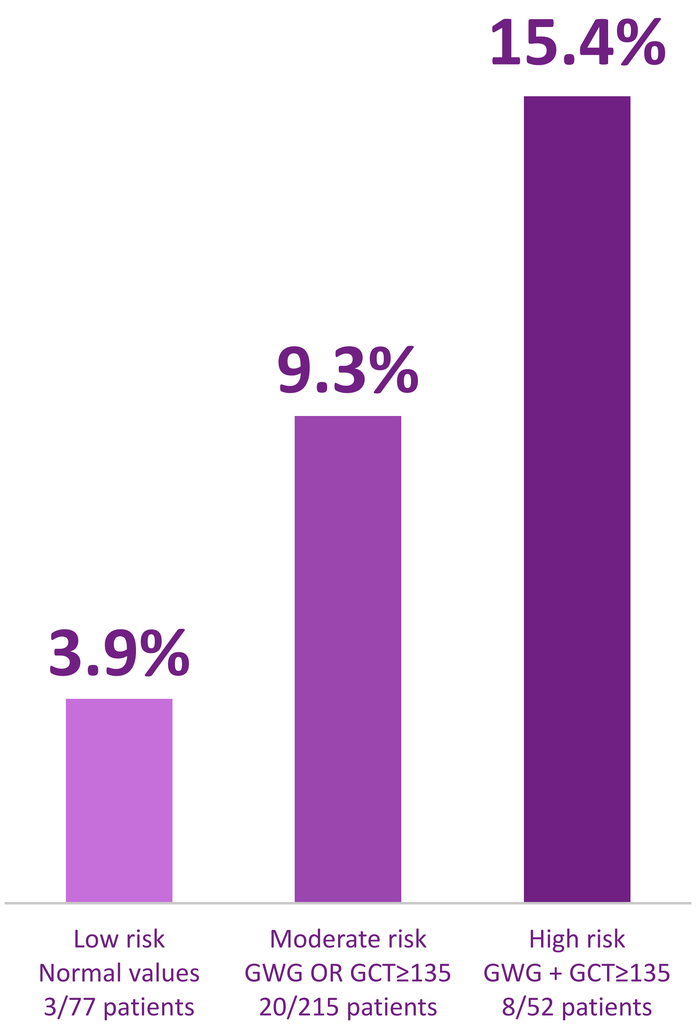
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RESULTS

Primary Outcome

9.0% **Overall Shoulder Dystocia Rate** (31/344)

Shoulder Dystocia Rate by Risk Group



Mantel-Haenszel trend test: p=0.02

KEY FINDING

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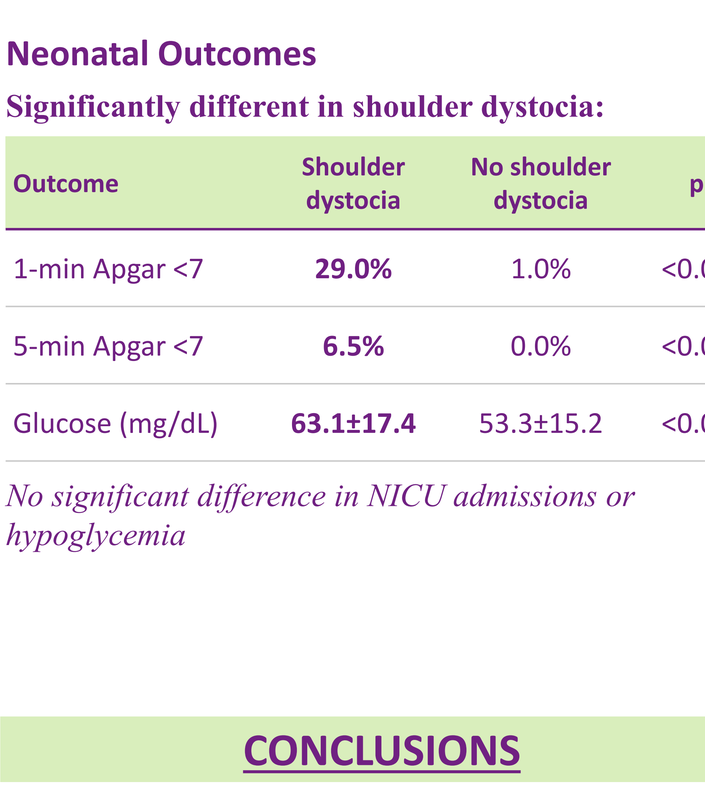
increased odds of shoulder dystocia

High vs. Low Risk: OR 4.03 (95% CI 1.08-15.00, p=0.04)

RESULTS (CONTINUED)

Racial Disparities

Shoulder dystocia rates by race (p=0.04):



Logistic Regression: Black OR 3.0 (1.15-7.61); Hispanic OR 2.69 (1.06-6.84)

Neonatal Outcomes

Significantly different in shoulder dystocia:

Outcome	Shoulder dystocia	No shoulder dystocia	p
1-min Apgar <7	**29.0%**	1.0%	<0.01
5-min Apgar <7	**6.5%**	0.0%	<0.01
Glucose (mg/dL)	**63.1±17.4**	53.3±15.2	<0.01

No significant difference in NICU admissions or hypoglycemia

CONCLUSIONS

Risk stratification using excessive GWG and elevated 1-hour GCT successfully identified pregnancies at increased risk for shoulder dystocia.

Clinical Impact: Practical tool for counseling and delivery planning in macrosomia.