

ABSTRACT

Background: Antenatal steroid (AS) is recommended for women at risk of late preterm (LP) deliveries (34-36 6/7 weeks) to reduce respiratory morbidities. Risk of neonatal hypoglycemia (NH) defined as blood glucose (BG) <40 mg/dl, hyperbilirubinemia and hypocalcemia are increased after AS. There are no studies evaluating the relationship between at least one dose of AS and short-term outcomes in LP neonates.

Objective: To determine short-term outcomes in LP neonates after receiving AS.

Design/Methods: Retrospective chart review of LP deliveries at Flushing Hospital Medical Center between January 2016 and November 2018. Exclusion criteria included mothers who received AS>7 days before delivery, treated with labetalol, multiple pregnancy, active bleeding, infection and diabetes mellitus (DM). Maternal demographic data included age, gravida, ethnicity, BMI, type of pregnancy, maternal comorbidities (gestational DM, hypertension, medication), doses of AS and mode of delivery. Neonatal data included gestational age (GA), birth weight (BW), gender, Apgar score, respiratory status, BG at delivery, bilirubin and calcium. Data were analyzed using STATA 15.0 software, Wilcoxon rank sum test, Fisher's exact test and chi square test, p<0.05 was considered significant.

Results: Of 406 charts reviewed, 211 met exclusion criteria. Of remaining 195 singleton LP deliveries, 68 (35%) received AS (G1) and 127 (65%) did not receive AS (G2). Maternal age, gravida, ethnicity, BMI, BW, gender, Apgar score between G1 and G2 were similar, p>0.05. In G1, 50/68 (74%) received one dose of AS and 18/68 (26%) received two doses of AS. Time of AS to delivery was <24 hours in 62/68 (91%). Of 25/68 (37%) with NH, BG was obtained within 12 hours and NH occurred at median time of 32 minutes of life, with 1.2 fold increased risk (95% CI 2.06-5.85). G1 and G2 were compared for GA, mode of delivery, respiratory status, NH, hyperbilirubinemia and hypocalcemia, Table 1.

Conclusions: In our small sample, one dose of AS decreased respiratory morbidities, increased the risk of NH and hyperbilirubinemia. Risk of hypocalcemia was not increased in LP neonates.

INTRODUCTION

- Antenatal steroid (AS) is recommended for women at risk of late preterm (LP) deliveries to reduce respiratory morbidities
- Late preterm is defined as gestational age 34 to 36 6/7 weeks
- Risk of neonatal hypoglycemia (NH) defined as blood glucose (BG) <40 mg/dl, hyperbilirubinemia and hypocalcemia are increased after AS
- There are no studies evaluating the relationship between at least one dose of AS and short-term outcomes in LP neonates

OBJECTIVE

- To determine short-term outcomes in LP neonates after receiving AS

METHODS

- **Design:** Retrospective chart review
- **Settings:** Flushing Hospital Medical Center
- **IRB:** Approved by Flushing Hospital Medical Center
- **Time Frame:** January 2016 to November 2018
- **Inclusion criteria:** Late preterm deliveries 34 weeks to 36 6/7 weeks age of gestation
- **Exclusion criteria:** Mothers who received AS>7 days before delivery, treated with labetalol, multiple pregnancy, active bleeding, infection and diabetes mellitus (DM)
- **Statistical analyses:** STATA 15.0 software, Wilcoxon rank sum test, Fisher's exact test and chi square test, p<0.05 was considered significant

RESULTS

- **Charts reviewed:** 195/406 met inclusion criteria
- **Group 1 (G1):** Received AS, n=68 (35%)
 - 50/68 (74%) received one dose
 - 18/68 (26%) received two doses, figure 1
- **Group 2 (G2):** Received no AS, n=127 (65%)
- **Time of AS to delivery:** <24 hours in 62/68 (91%), figure 2
- **G1 vs G2:** maternal age, gravida, ethnicity, BMI, BW, gender, Apgar score, p>0.05 for all
- **G1 vs G2:** GA, mode of delivery, Table 1
 - respiratory status, NH, hyperbilirubinemia, hypocalcemia, figure 3
- **Neonatal hypoglycemia (NH):** 25/68 (37%), BG was obtained within 12 hours of life and NH occurred at median time of 32 minutes of life with 1.2 fold increased risk (95% CI 2.06-5.85)

Table 1: Short term outcomes of G1 vs G2 for GA and mode of delivery

	G1 (n=68) n (%)	G2 (n=127) n (%)	p value
GA			
34 weeks	25 (36.8)	19 (15.0)	
35 weeks	25 (36.8)	32 (25.2)	
36 weeks	18 (26.5)	76 (59.8)	
Cesarean section	30 (44.1)	58 (45.7)	0.836

p<0.05 was considered significant

Figure 1: G1, 1 dose AS vs 2 doses AS

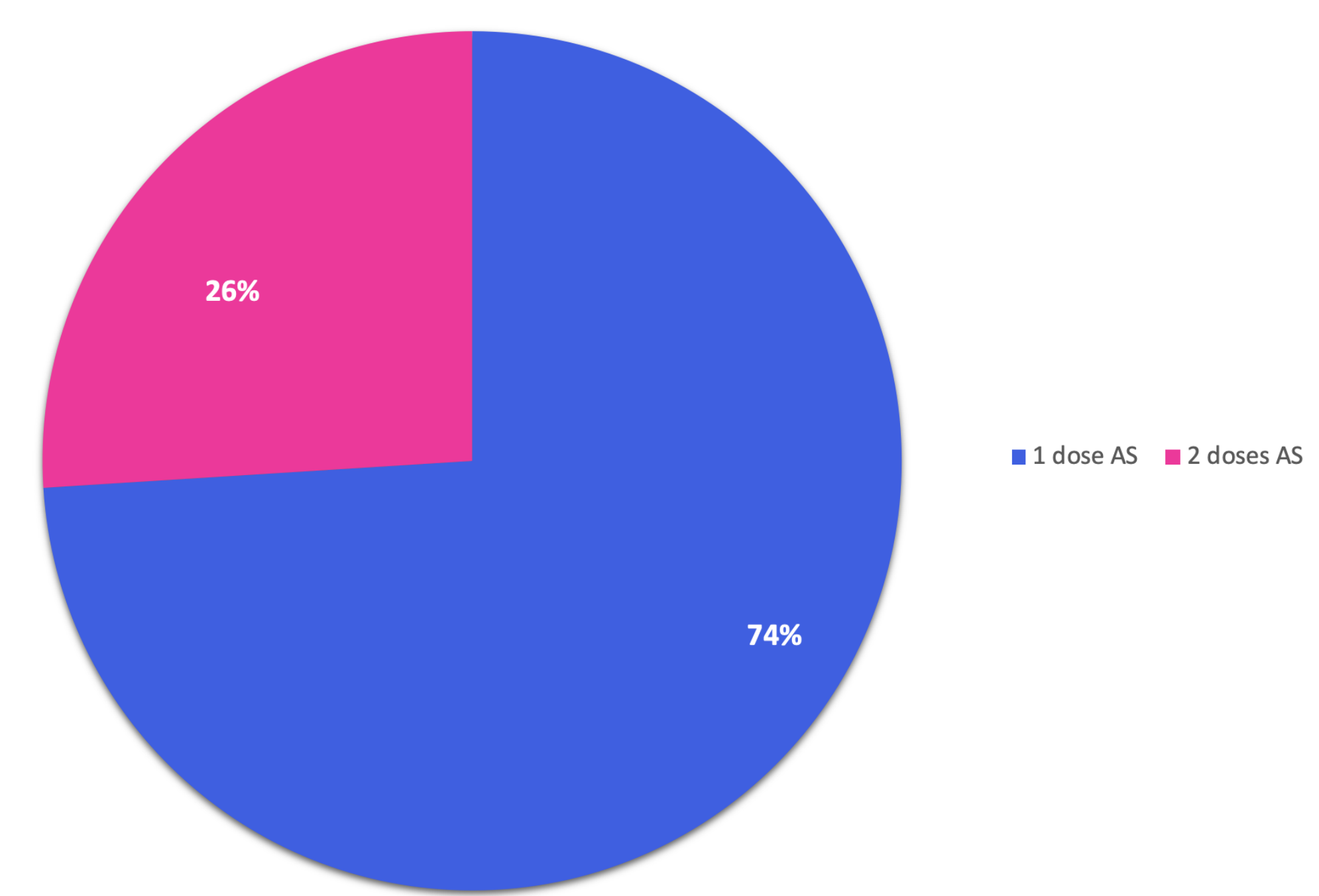
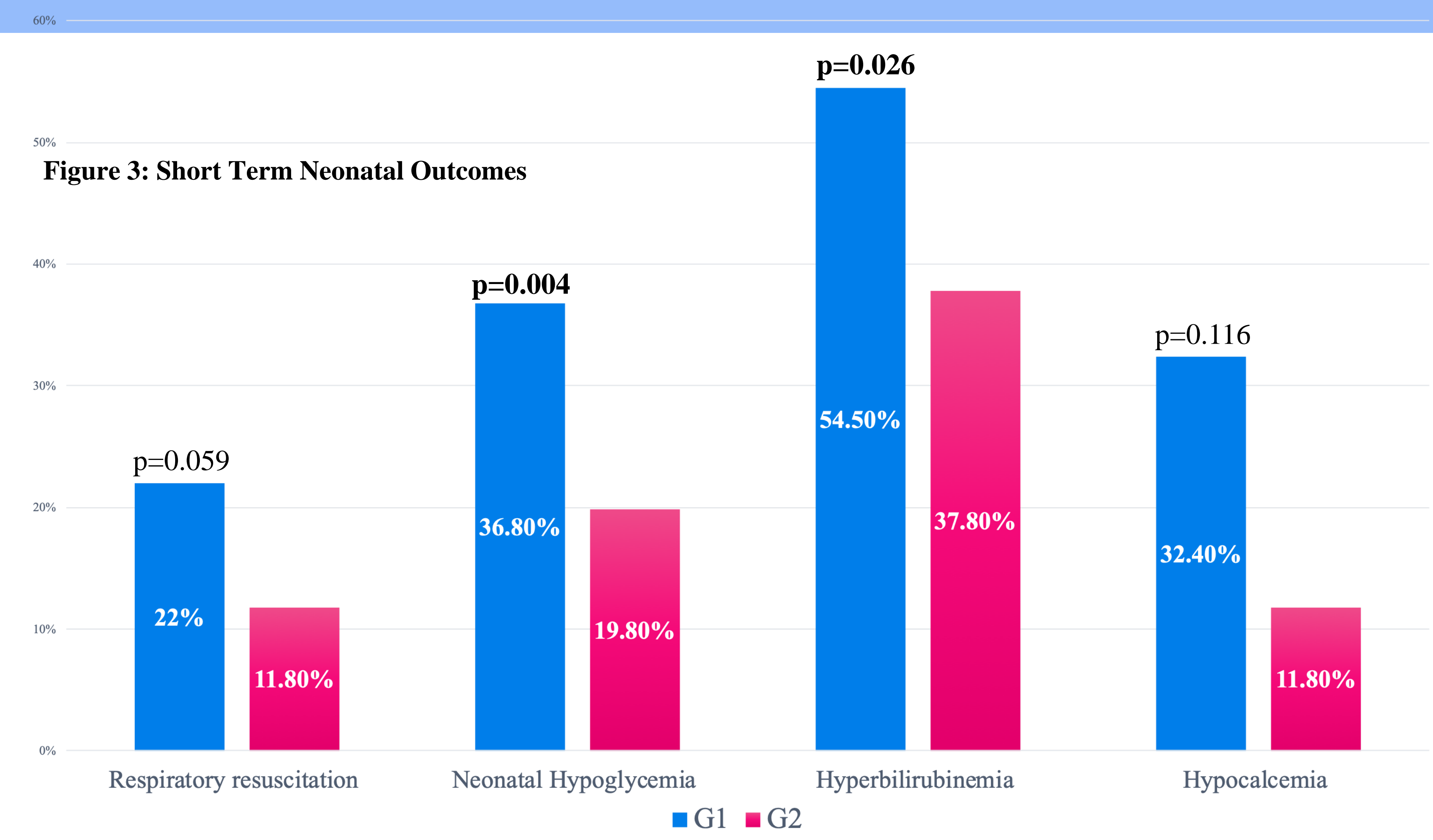
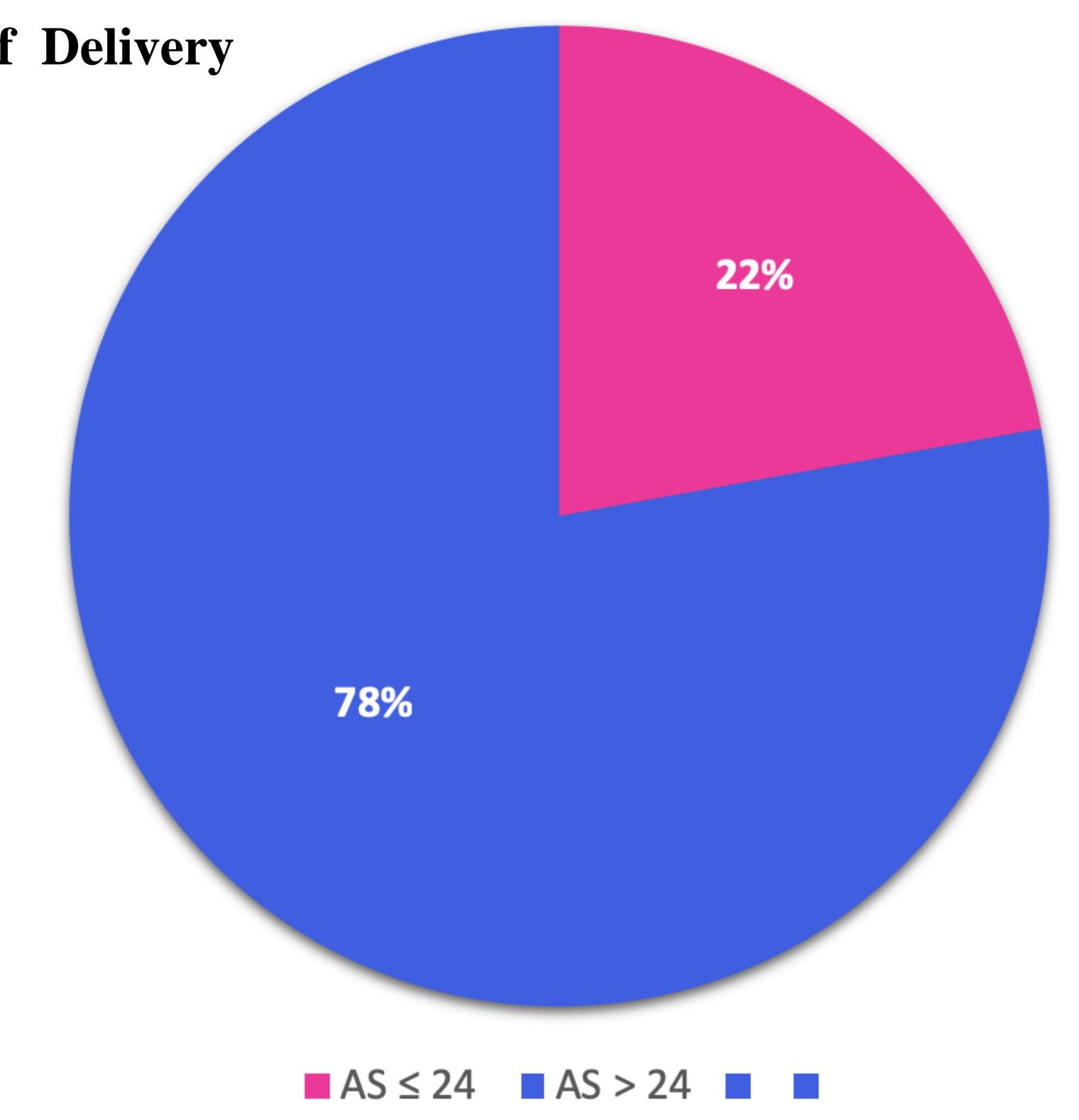


Figure 2: AS to Time of Delivery



CONCLUSIONS

- One dose of AS decreased respiratory morbidities, increased the risk of NH and hyperbilirubinemia
- Risk of hypocalcemia was not increased in LP neonates

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