

# Differences in dosing strategies and perinatal outcomes for pregnant persons on buprenorphine compared with buprenorphine-naloxone

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## Background

- Opioid use disorder (OUD) is increasingly prevalent within the U.S., and paralleling that, within the pregnant population.
- The standard of care for OUD in pregnancy is medication for opioid use disorder (MOUD). MOUD has been shown to:
  - Reduce relapse risk
  - Increase adherence to prenatal care
  - Reduce the maternal and fetal complications described previously.
- There are two medications used for MOUD: buprenorphine & methadone. Buprenorphine (BUP) can be used alone or in combination with naloxone.
- There is insufficient data on buprenorphine-naloxone (BUP-NA) in pregnancy, and furthermore there is limited data to guide dosing strategies for medications for opioid use disorder (MOUD) beyond withdrawal symptoms.

## Objectives

This study sought to compare perinatal outcomes between buprenorphine (BUP) and buprenorphine/naloxone (BUP-NA) along with evaluating dosing alterations in pregnancy.

## Study Design

- Retrospective cohort study
- Inclusion criteria:
  - Patients on buprenorphine type MOUD during their pregnancy
  - Delivered at the study institution between January 2017 and July 2023
- 2 cohorts:
  - Buprenorphine
  - Buprenorphine-naloxone
- Statistical methods:
  - Statistical significance was defined as  $p < 0.05$ .
  - Chi-square, McNemar test, student t-tests, non-parametric equivalents, multivariable regression analysis

## Results

- 255 patients were identified. 192 patient in the BUP group and 63 patients in the BUP-NA group
- No differences in maternal characteristics across groups (Table 1)
- No differences in perinatal outcomes were identified, except for active drug use during pregnancy ( $p = 0.04$ ) (Table 2)
- Changes in dosing of MOUD occurred in 50.6% of patients. (Figure 1)
  - More patients taking BUP-NA (31.7%) required an increase in dosage compared with BUP alone (31.7%) ( $p < 0.01$ )
  - The frequency of weaning between the two groups ( $p=0.523$ ) was similar with the majority of the cohort (73.5%) not attempting wean during pregnancy.
- Both groups saw an increase in split dosing strategy from the beginning of pregnancy to time of delivery. (Figure 1)
  - Initially, 50.5% of patients were on a split dosing strategy and by delivery 68% of patients requiring split dosing ( $p < 0.01$ ).
  - There was no difference between group for split dosing at the beginning of pregnancy ( $p =$ ) and at delivery ( $p =$ )
- No differences of dosage of buprenorphine (mg) at beginning of pregnancy ( $p=0.37$ ) or at delivery between groups ( $p=0.30$ ) (Figure 2)

Table 2: Perinatal outcomes compared across BUP and BUP-NA

	Buprenorphine (n=192)	Buprenorphine/naloxone (n=63)	P
Pregnancy induced hypertension	26 (13.5%)	8 (12.7%)	0.86
Gestational diabetes	14 (7.3%)	2 (3.2%)	0.37
Fetal Growth Restriction	9 (4.7%)	5 (7.9%)	0.34
<b>Active illicit drug use</b>	<b>52 (27.1%)</b>	<b>9 (14.3%)</b>	<b>0.04</b>
Any OB complication	16 (8.3%)	6 (9.5%)	0.77
PTB <37 weeks	23 (12.0%)	10 (15.9%)	0.43
Cesarean Delivery	85 (45.0%)	26 (41.3%)	0.61
Discharge dose (mg)	11.4 ( $\pm 7.1$ )	12.7 ( $\pm 7.6$ )	0.32
Birth weight (g)	3060 ( $\pm 598$ )	3022 ( $\pm 623$ )	0.98
Neonatal opioid withdrawal syndrome (NOWS)	148 (79.1%)	50 (79.4%)	0.97
Pharmacologic treatment for NOWS	75 (40.1%)	25 (39.7%)	0.84
NOWS requiring morphine	43 (22.4%)	12 (19%)	0.58
Admitted to NICU	119 (62.6%)	35 (55.6%)	0.32
Infant hospital LOS (days)	12.5 ( $\pm 12.1$ )	10.4 ( $\pm 12.0$ )	0.48

Figure 1: Dosing compared across BUP and BUP-NA

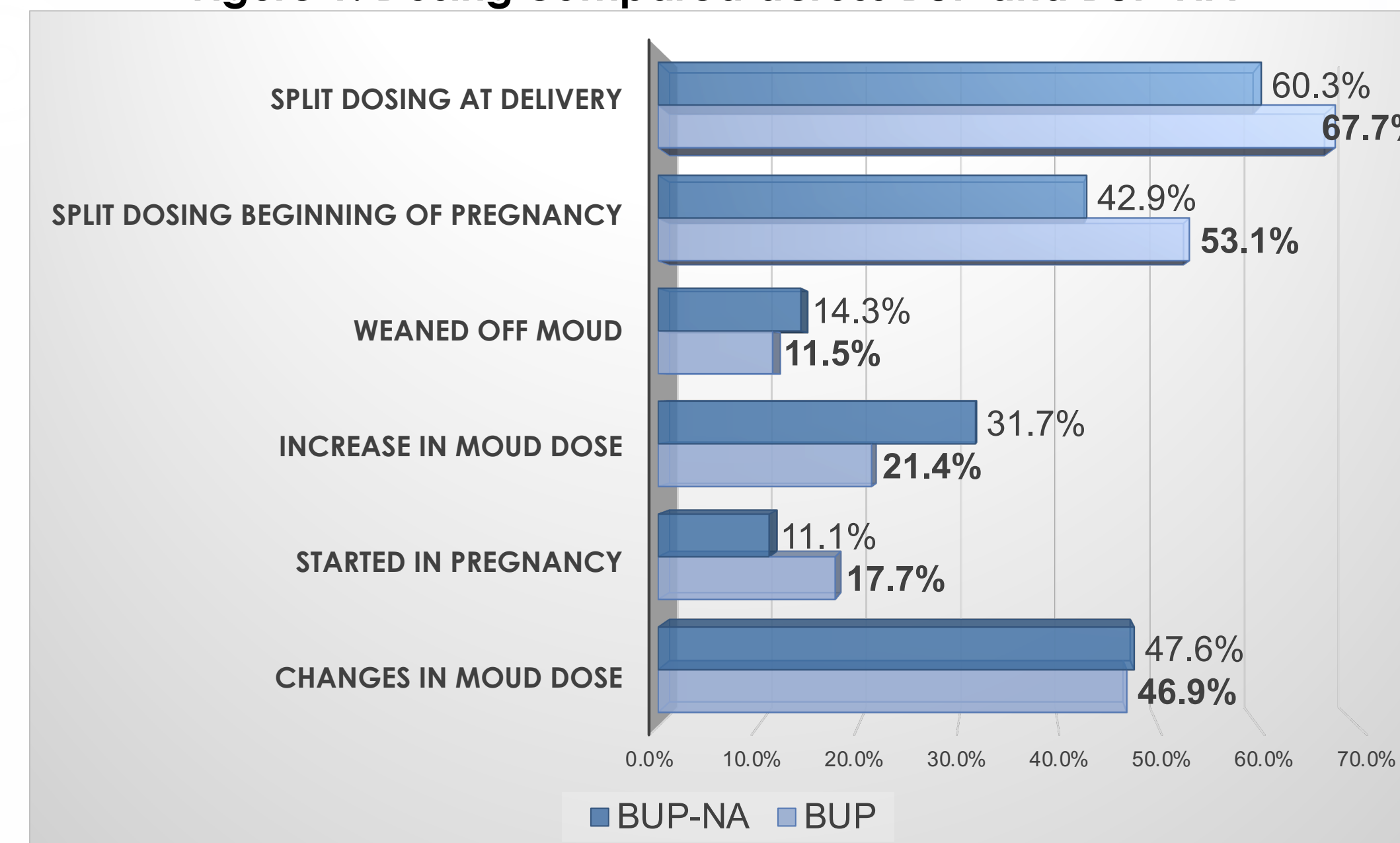


Figure 2: Dose requirements across BUP and BUP-NA

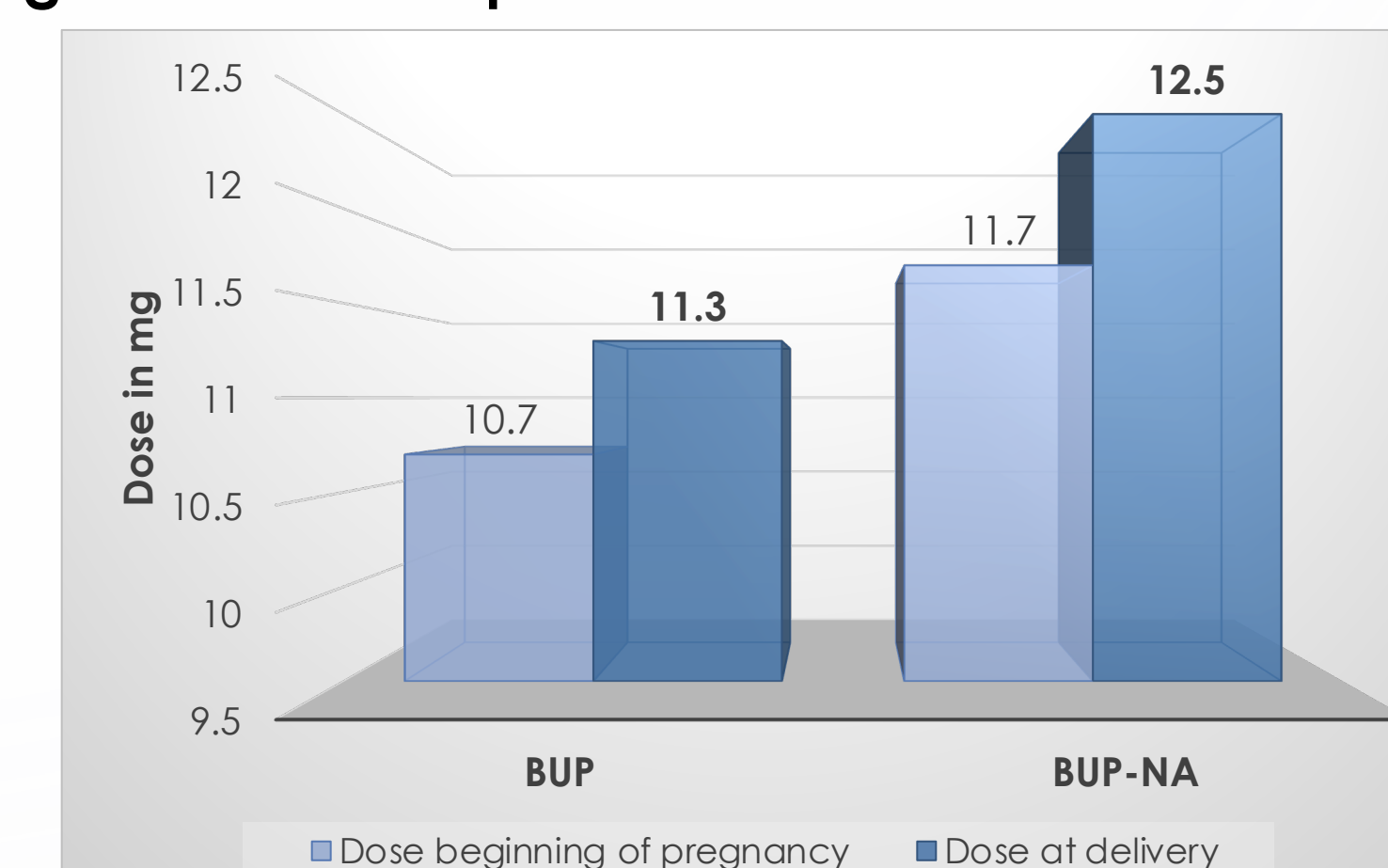


Table 1: Maternal characteristics compared across BUP and BUP-NA

	Buprenorphine (n=192)	Buprenorphine/naloxone (n=63)	P
Age (years)	32.8 ( $\pm 22.5$ )	31.7 ( $\pm 4.1$ )	0.70
White	171 (89.1%)	57 (90.5%)	0.75
Government Insurance	153 (82.3%)	56 (90.3%)	0.13
Multigravida	162 (84.4%)	54 (85.7%)	0.80
BMI (kg/m <sup>2</sup> )	31.0 ( $\pm 6.3$ )	29.8 ( $\pm 4.6$ )	0.09
Any maternal co-morbidity	50 (26.0%)	18 (28.6%)	0.69
Psychiatric Medication	89 (46.4%)	32 (50.8%)	0.54
PNC initiation in first trimester	120 (71.0%)	33 (57.9%)	0.07

## Conclusion

- Perinatal outcomes including NOWS were similar between BUP and BUP-NA in our cohort, supporting the growing literature of safety of BUP-NA in pregnancy.
- The majority of patients on any buprenorphine derived MOUD required split dosing strategies in pregnancy.
- Patients taking BUP-NA may need increased dosages during pregnancy compared to patients taking BUP.

## References

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## QR Code

