MARINUS PHARMACEUTICALS

Ganaxolone in PPD

July 23, 2019

MAGNOLIA Postpartum Depression Study

AMARYLLIS Postpartum Depression Study

Safe Harbor Statement

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Marinus PPD Development Program with Ganaxolone

MAGNOLIA
Postpartum Depression Study

Part 1

48-hour IV + 12-hour taper

Part 2

6-hour IV + 900mg oral

Early onset of action

Good safety

Attractive efficacy

AMARYLLIS
Postpartum Depression Study

Low Dose

Oral 675mg

High Dose

Oral 675mg/BID for 2 days
then 1125 mg for 26 days

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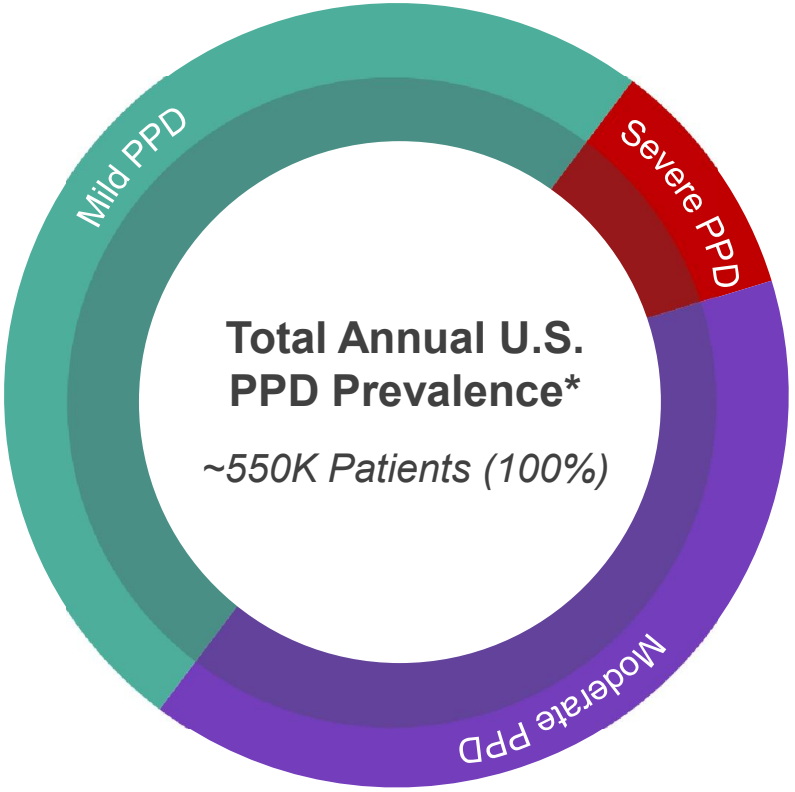
PPD Market Segmentation and Value



10% - 20% of moderate and severe PPD patients require hospitalization

*PPD prevalence estimated at ~13% of total 2018 live births of 4.1MM – RBC Analyst report 10/18/18

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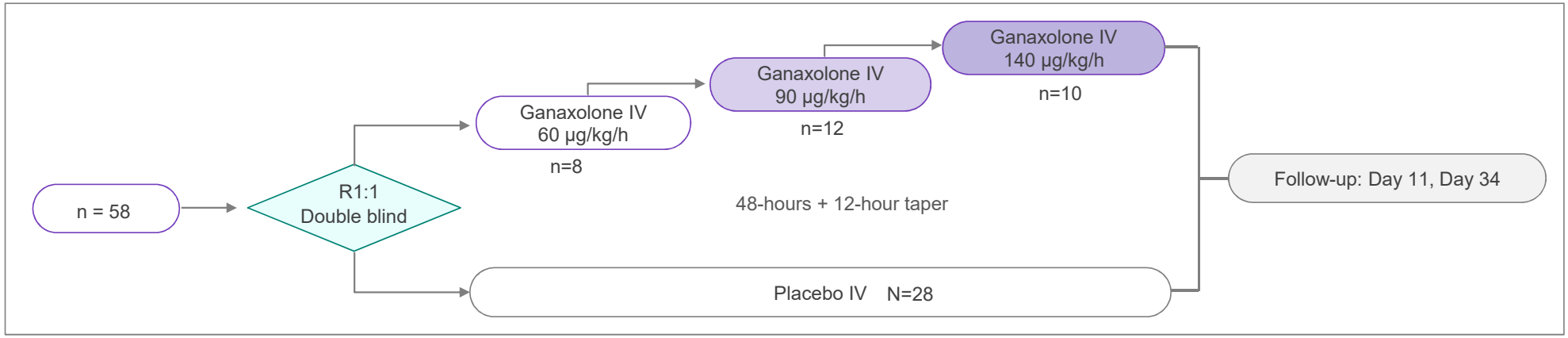
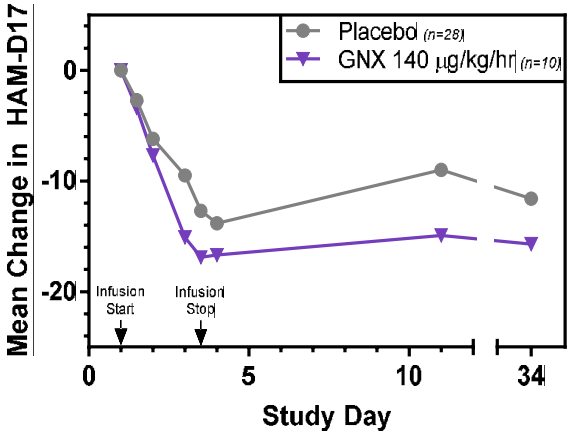
Magnolia Study - Part 1 Results (December 2018)

Evaluate safety, tolerability, PK & efficacy of three exposure levels of ganaxolone IV in women with PPD





- Clinically meaningful early and durable response seen with Ganaxolone IV at 48-hours
- Generally safe and well tolerated, No SAEs

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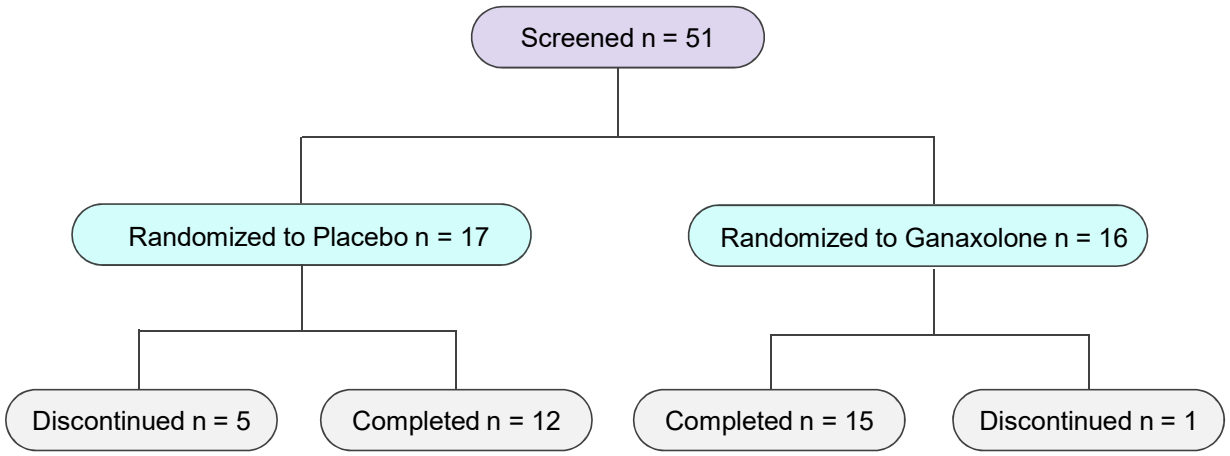
Patient Disposition and Baseline Characteristics



By subject	1
Lost to follow up	2
Physician decision	1
Non-compliance	1

By subject	1

Baseline Characteristics

	Placebo (n=17)	GNX (n=16)
CHARACTERISTICS	n (%)	n (%)
Age (years) [mean (SD)]	24.9 (5.1)	28.8 (5.0)
Race		
Black of African-American	12 (70.6)	8 (50)
White	4 (23.5)	8 (50)
Other	1 (5.9)	0 (0)
Pre-partum onset of depression	3 (18)	7 (44)
First depression episode	6 (35)	6 (38)
Concomitant antidepressant	4 (24)	2 (13)

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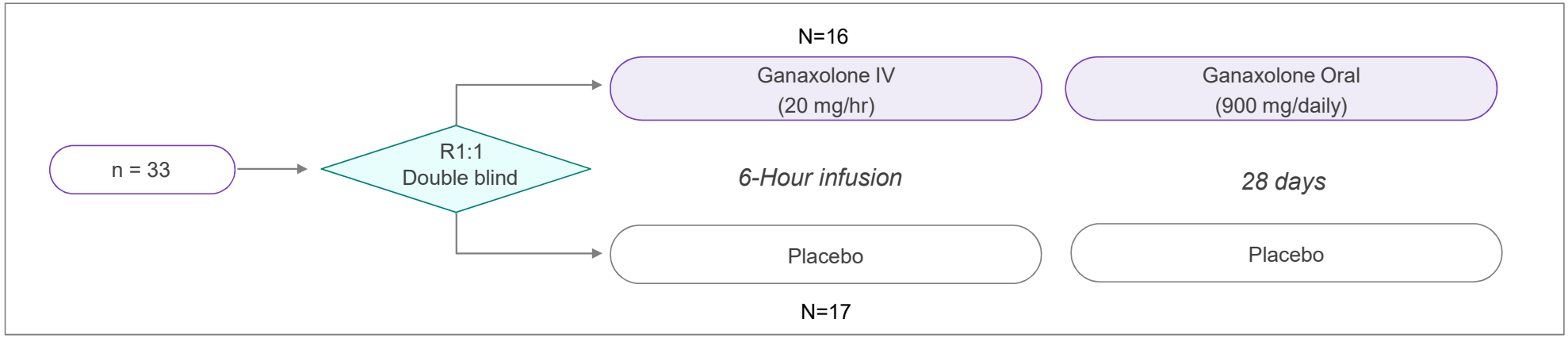
Magnolia Study – Part 2 Trial Design



Trial Details

Evaluate safety, tolerability and efficacy of ganaxolone IV to oral

6 US sites

Multi-cohort, IV to oral administration

HAM-D baseline: GNX 26.6 PBO 26.4

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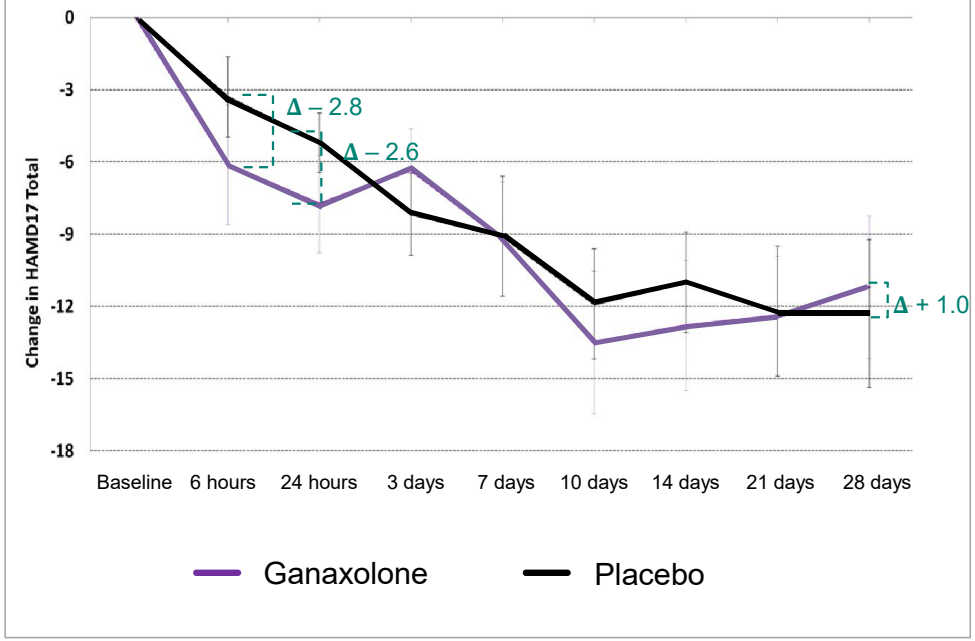
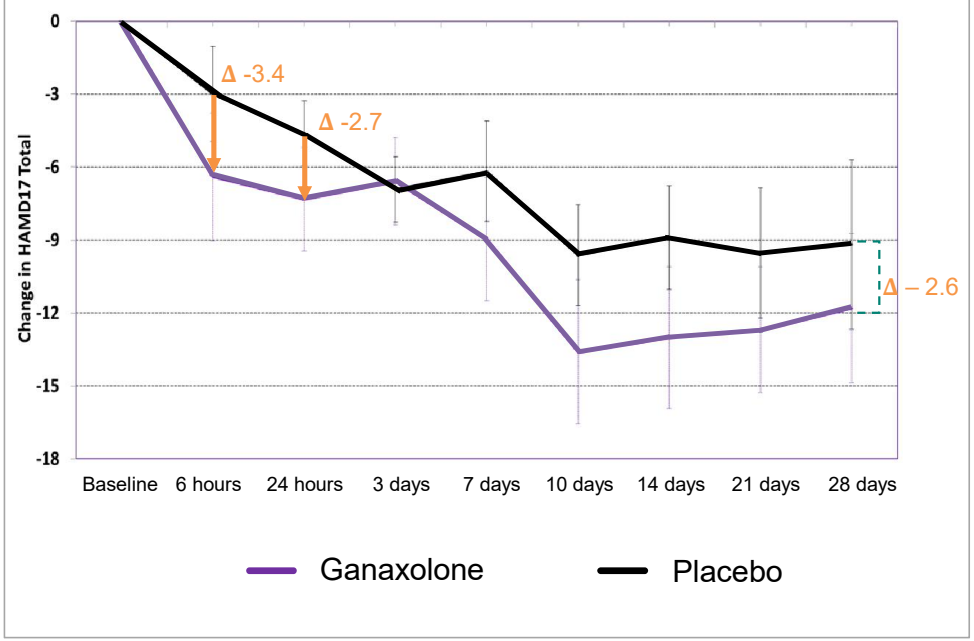
Efficacy Results: HAM-D17 Mean Change from Baseline

HAM-D17 Mean Change from Baseline
ITT Population



HAM-D17 Mean Change from Baseline
Per Protocol Population



Least-squares (LS) mean reductions reported

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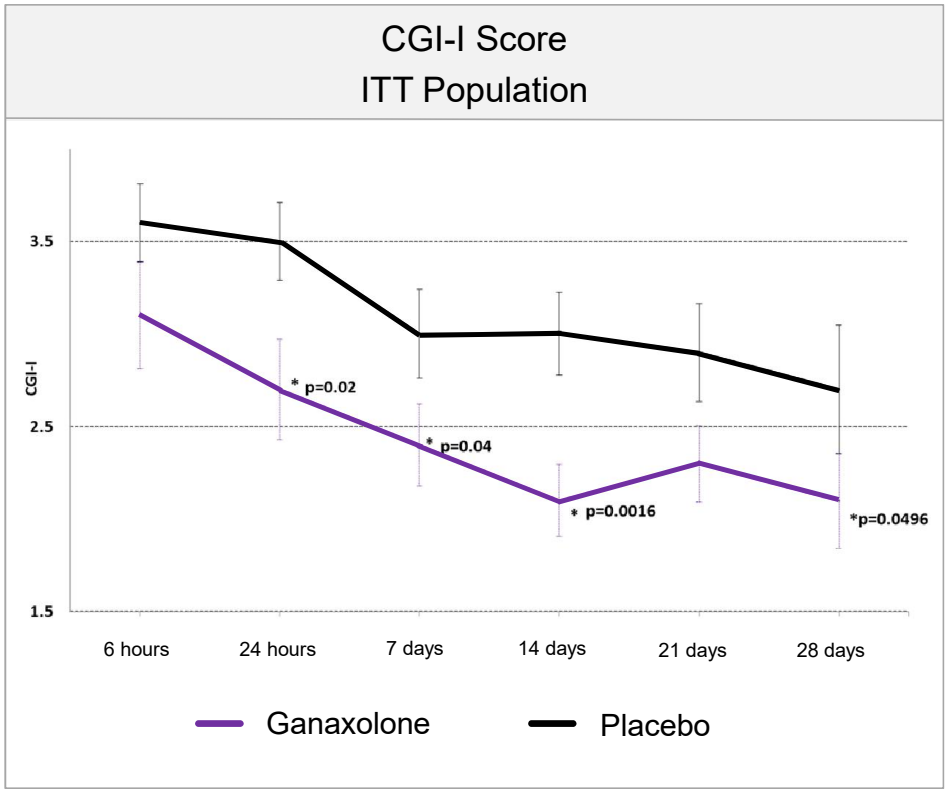
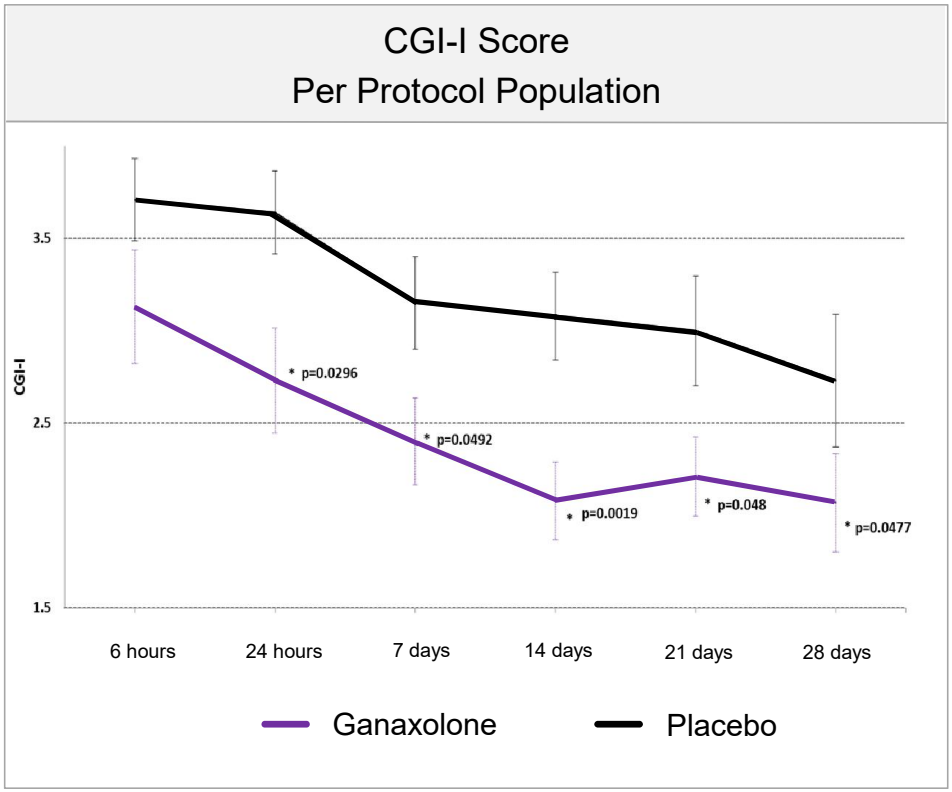
Efficacy Results: CGI-I Mean Change from Baseline





Least-squares (LS) mean reductions reported

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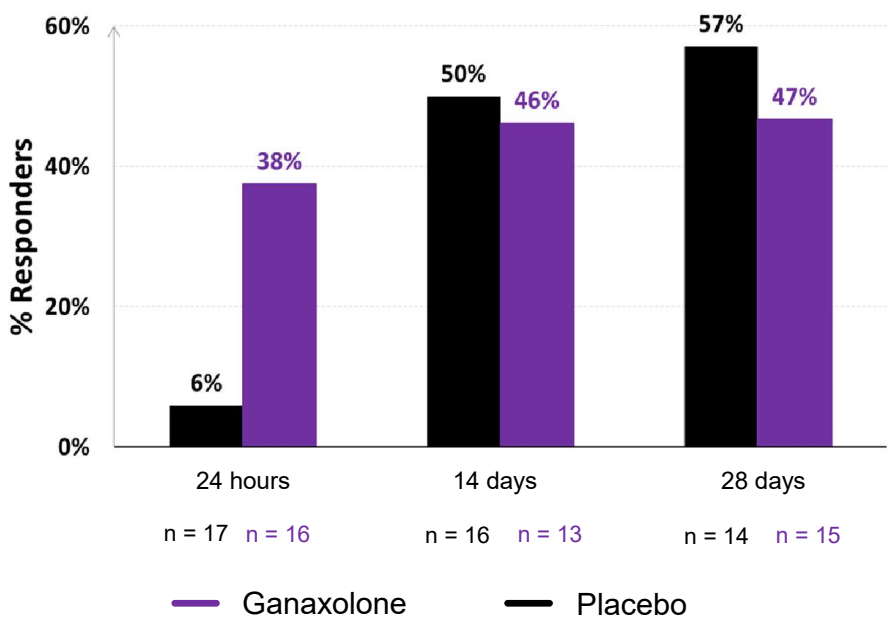
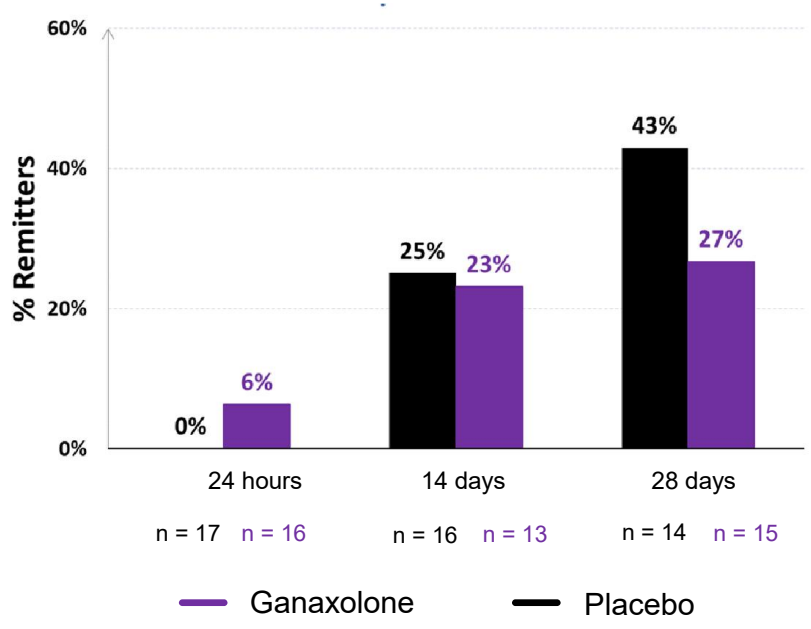
HAM-D17 Response and Remission Rates - ITT Population

HAM-D17 Response Rates



Response: HAM-D17 decrease > 50%

HAM-D17 Remission Rates



Remission: HAM-D17 > 7 points

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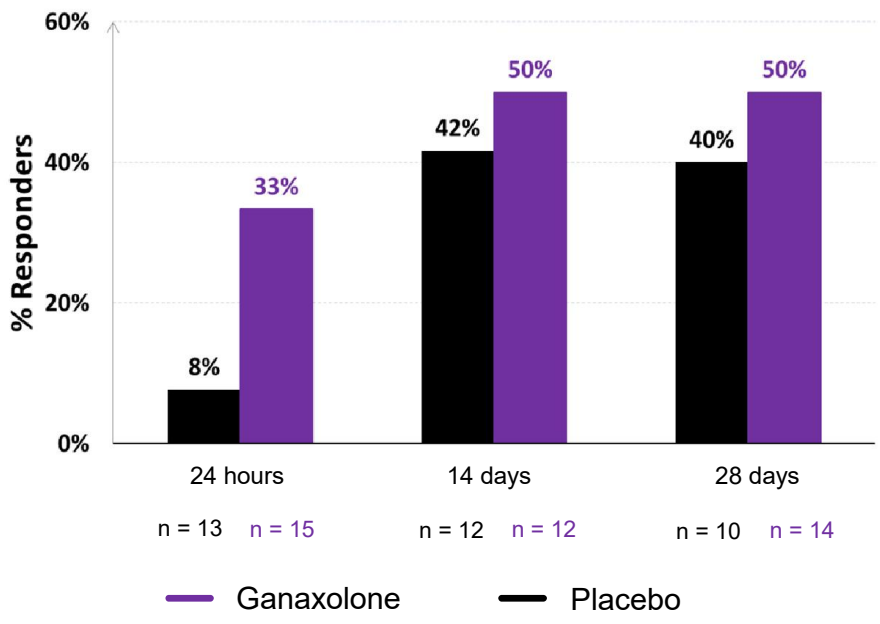
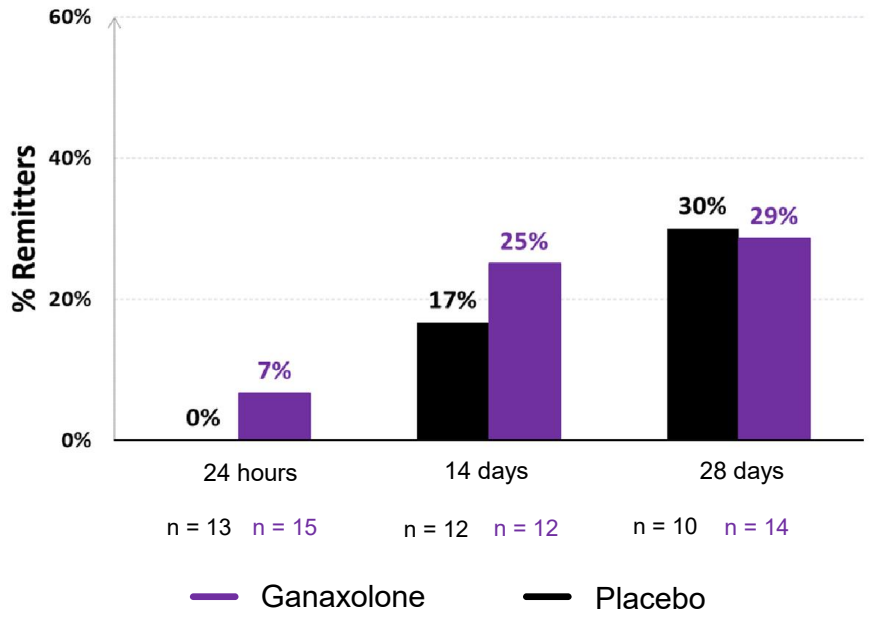
HAM-D17 Response and Remission - Per Protocol Population

HAM-D17 Response Rates



Response: HAM-D17 decrease > 50%

HAM-D17 Remission Rates



Remission: HAM-D17 > 7 points

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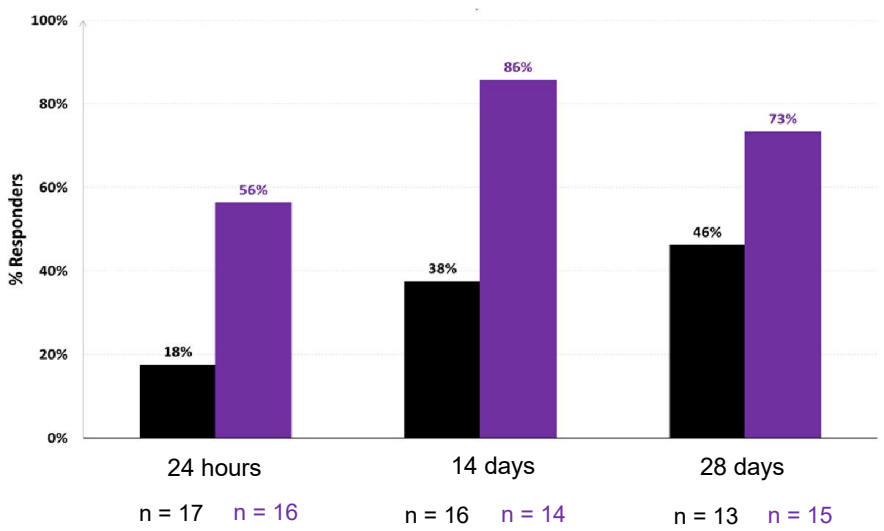
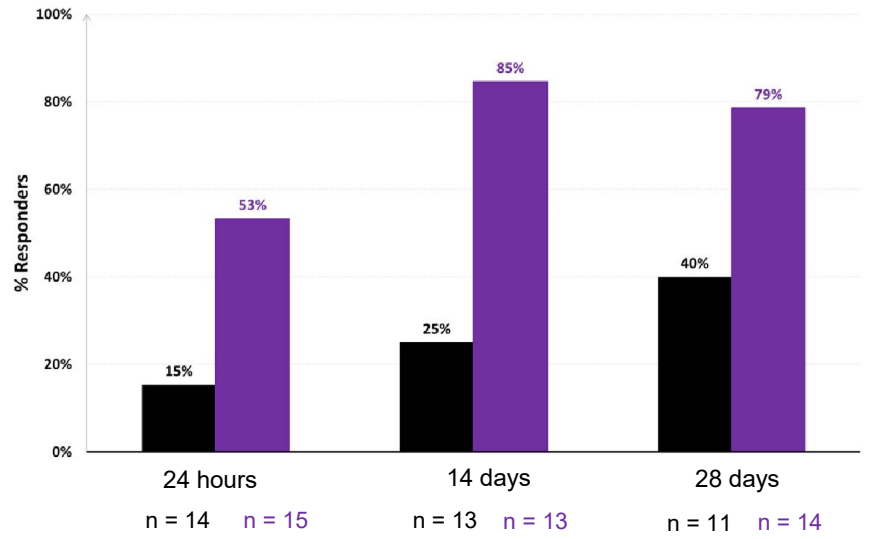
CGI-I Response Rates

ITT Population



Per Protocol Population



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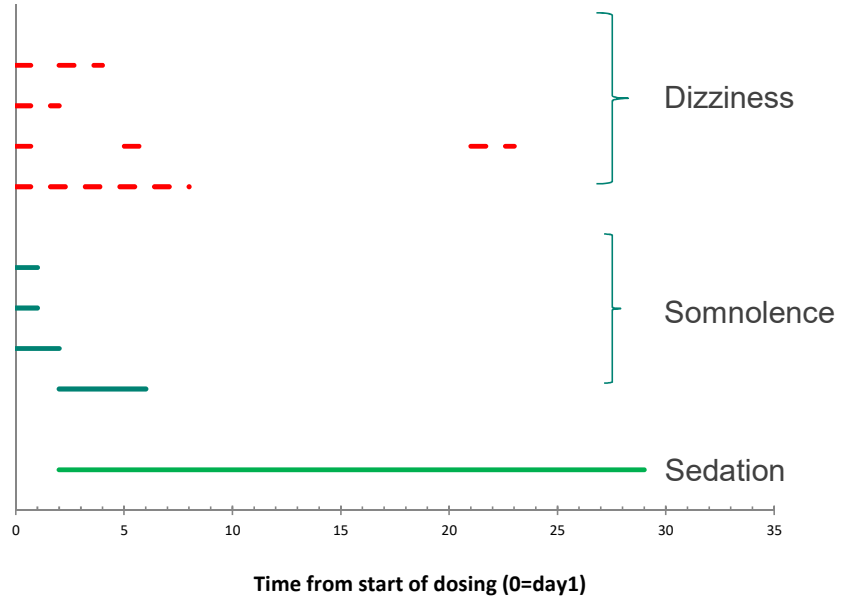
Tolerability and Safety

TEAE	Placebo n (%)	Ganaxolone n (%)	
Dizziness	1 Mod (6)	4 Mod (25)	
Sedation	1 Mild (6)	1 Mod (6)	
Somnolence	1 Mild (6)	1 Mild	3 Mod (25)
DC for AE	0	0	
SAE	1 (suicide attempt)	0	
Dose Reduction	1Dizziness (6)	2 Dizziness (12)	
	1 headache (6)	1 somnolence (6)	
		1 sedation (6)	
		1 urticaria (6)	

Temporal Relationship Between Treatment and Sedation, Somnolence, and Dizziness



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Amaryllis – Ganaxolone Oral for PPD

AMARYLLIS
Postpartum Depression Study

Evaluate safety, tolerability, PK and efficacy of oral ganaxolone in women with PPD

Baseline HAM-D17 scores: low dose - 25.5, high dose - 25.4

Low Dose

n = 25 → Ganaxolone Oral (675 mg/daily)

4 Weeks

High Dose

n = 43 → Ganaxolone Oral (675 mg at dinner & bedtime) *Day 1-2* → Ganaxolone Oral (1,125 mg/daily) *Day 3 - 28*

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Amaryllis – Change from Baseline in HAM-D17 Score

AMARYLLIS
Postpartum Depression Study

	Day 2	Day 15	Day 29
Low dose (675mg)	0.8	9.8	12.2
High dose (1125mg)	2.7	9.3	14.5

- Generally safe and well tolerated
- No SAEs or discontinuations due to TRAEs
- No syncope or loss of consciousness

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Ganaxolone in PPD: Conclusions / Next Steps

Magnolia Part 2 data: ganaxolone administered as 6-hour infusion provided rapid onset of activity with clinically meaningful reductions in HAM-D scores at the early time points of 6 hours and 24 hours of treatment.

- Second proof-of-concept for the therapeutic potential of IV ganaxolone in the treatment of PPD.

IV ganaxolone may have the competitive advantage of a 6-hour onset of action, differentiating safety and ease of administration

IV and oral ganaxolone safe and well-tolerated,

- No serious adverse events or discontinuations due to treatment related adverse events
- No incidences of syncope or loss of consciousness were observed in these studies

Path forward for ganaxolone in depressive disorders will likely be a 48-hour infusion.

Company to discuss results generated to-date with regulators in order to reach agreement on the next steps in PPD.

Evaluate options to pursue development of oral ganaxolone with the support of a partner.

Explore options in other depressive disorders, including treatment resistant depression.

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Q&A

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Thank You