



## Controlling cortisol in CNS<sup>1</sup> disease – Xanamem;<sup>®</sup> a selective 11 $\beta$ -HSD1 inhibitor as a potential new therapeutic for neuropsychiatric diseases.

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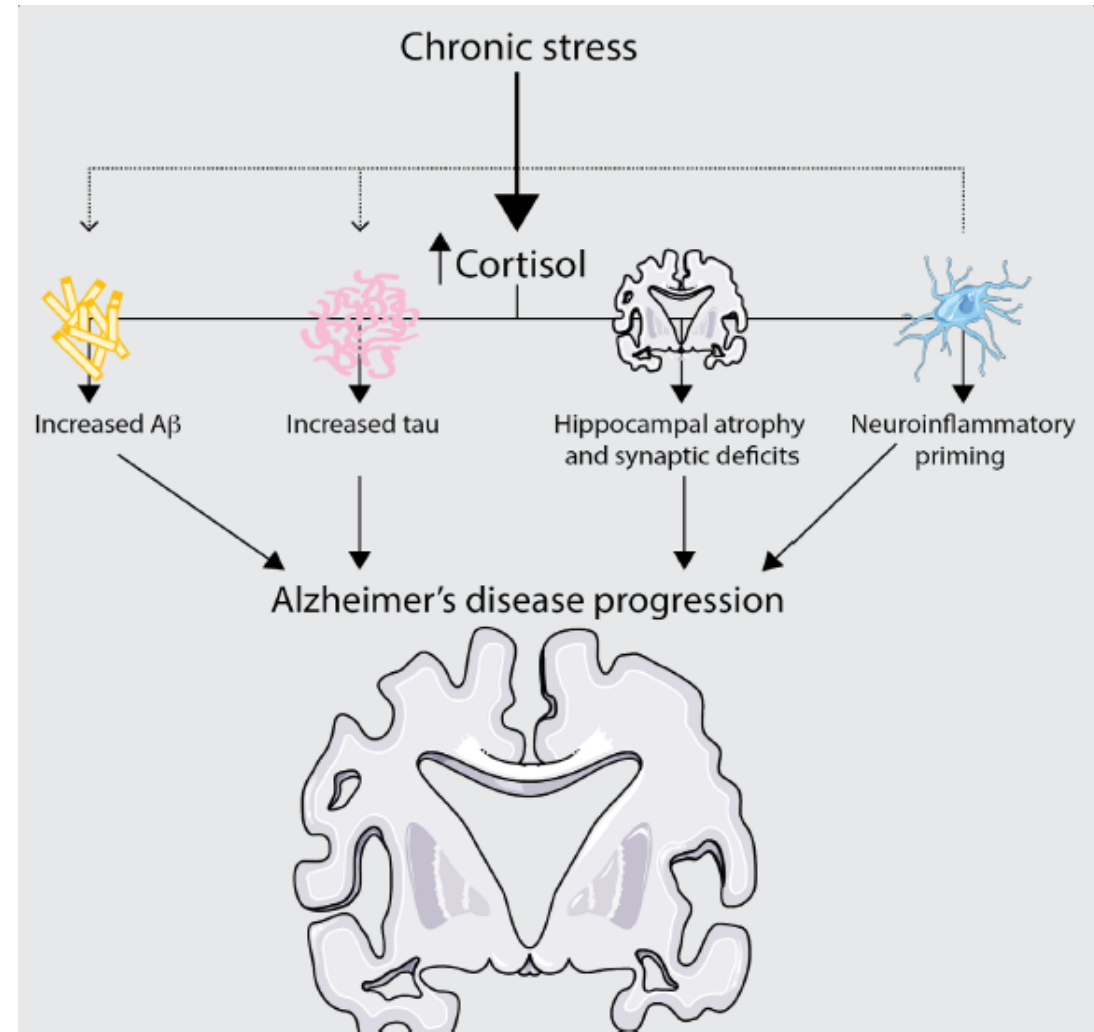
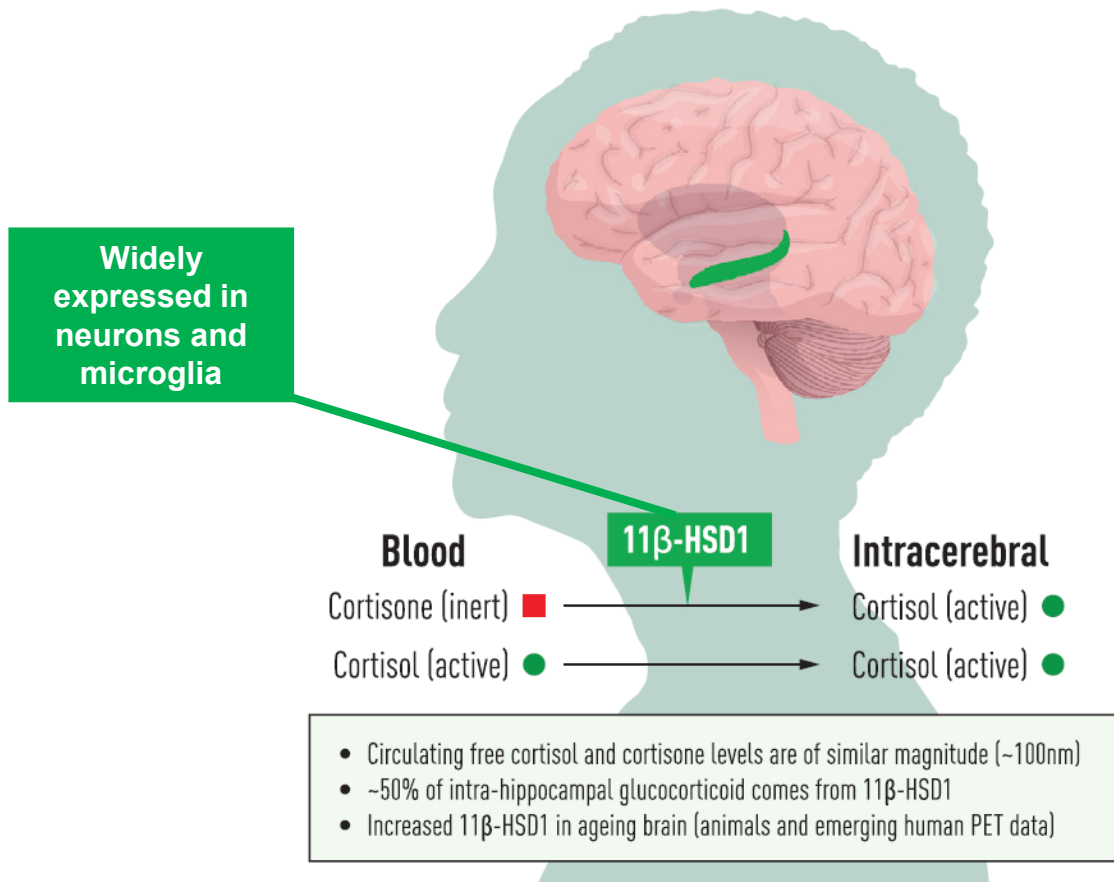
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# The potential role of brain cortisol in Alzheimer's disease (AD)

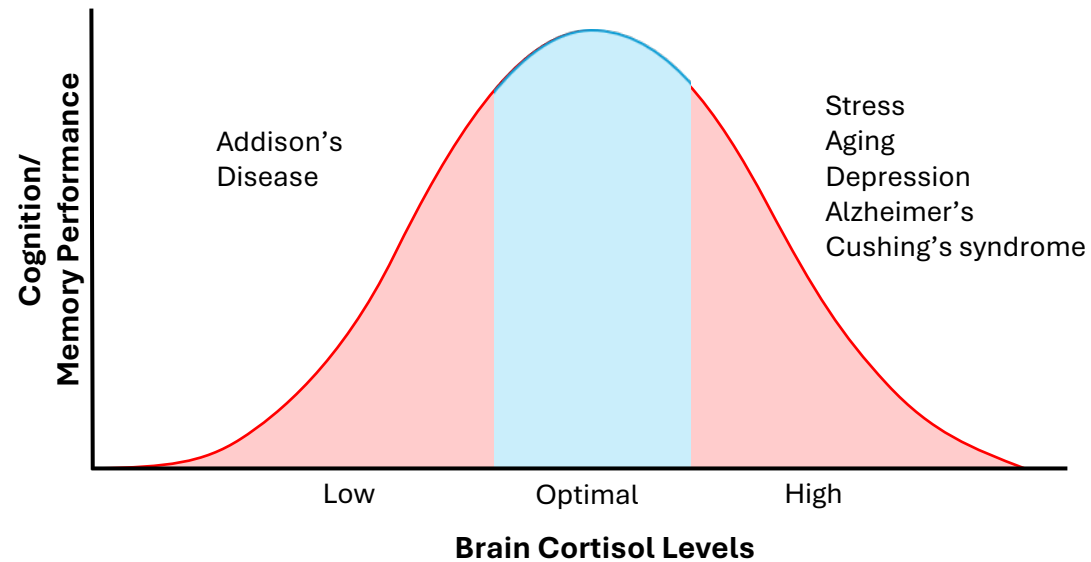
# Cortisol and the Alzheimer's brain

“Stress” and/or genetic factors may drive multiple AD mechanisms via cortisol



# Impact of cortisol on cognition

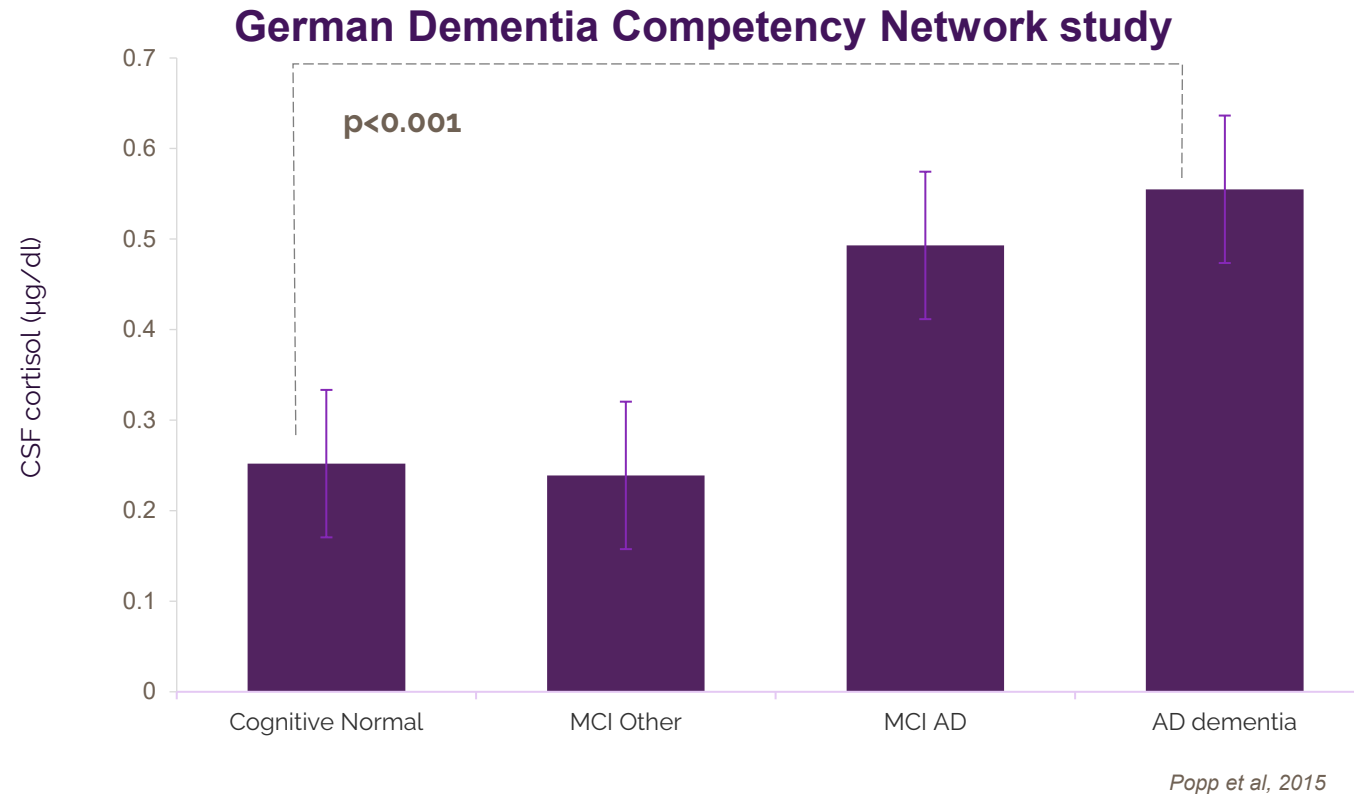
Abnormal brain cortisol levels alter cognition



**Optimal cognition requires 'normal' brain cell cortisol levels - largely driven by local  $11\beta$ -HSD1 activity**

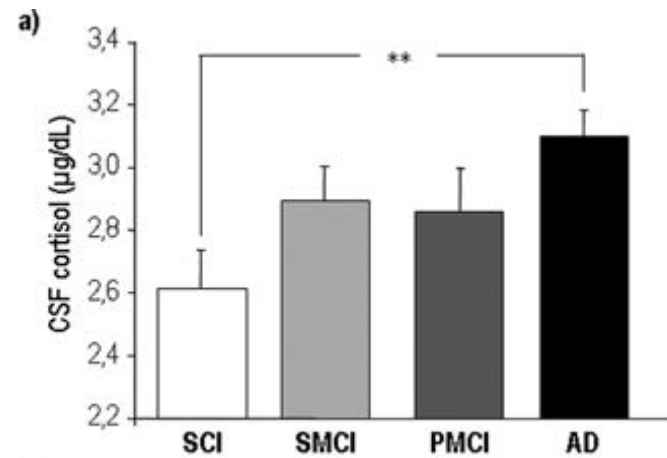
# Elevated human brain cortisol levels linked to AD

Brain fluid cortisol measurements best reflect the tissue cortisol environment

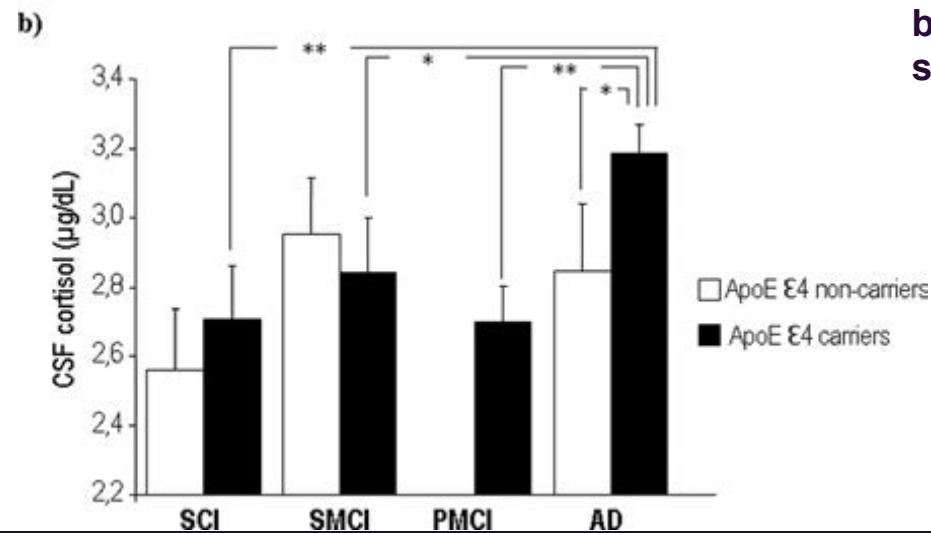


# Major AD genetic risk factor of ApoE4 associated with elevated brain cortisol levels

~67% of patients in AD trials have one or two copies of the ApoE4 gene



a) CSF cortisol level by disease classification (SCI: subjective cognitive impairment; SMCI stable mild cognitive impairment; PMCI progressive mild cognitive impairment; AD Alzheimer's disease)



b) As above by known ApoE4 genetic status (0 vs. 1-2 copies)

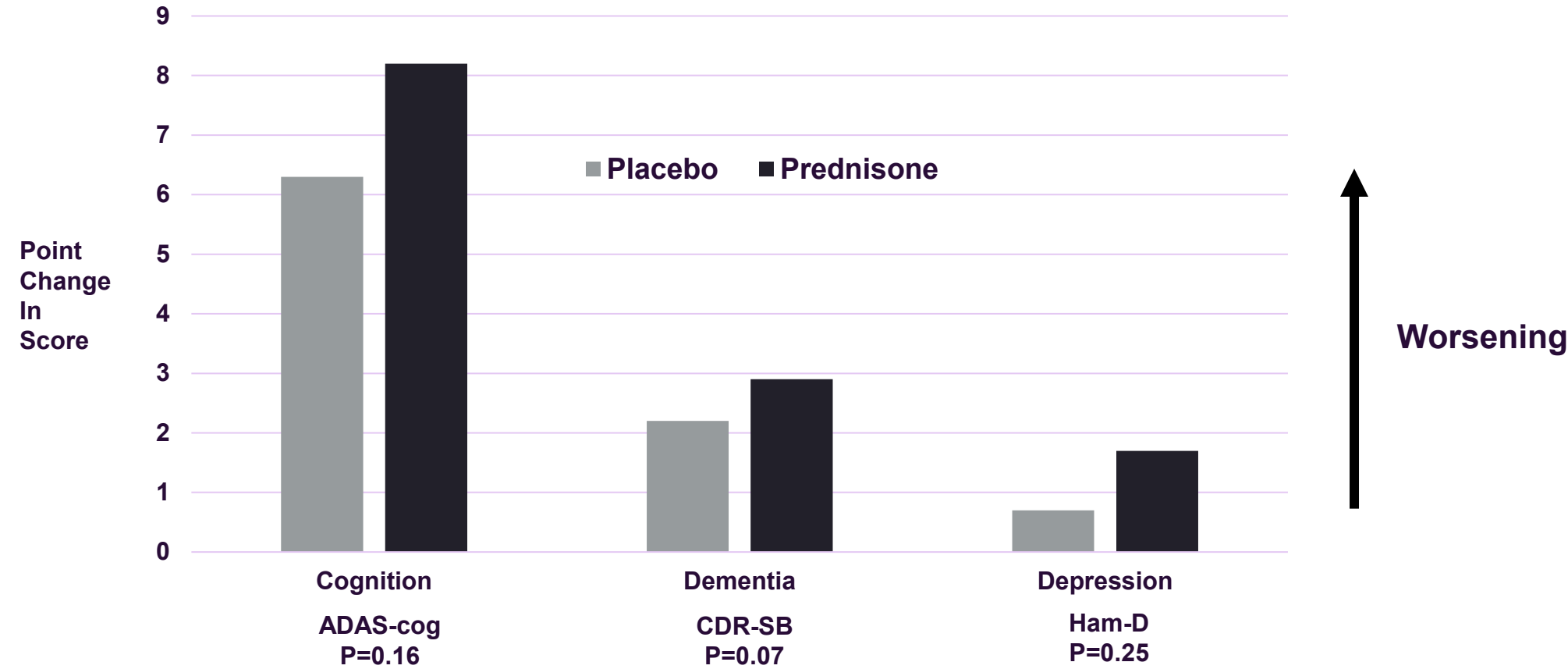
# Cortisol excess is toxic to the brain

Literature from clinical use as a therapeutic and excess cortisol in Cushing's syndrome

| Symptom or sign of brain toxicity       |
|-----------------------------------------|
| Trends to worsening Alzheimer's disease |
| Shrinkage to hippocampus                |
| General brain shrinkage                 |
| Memory impairment                       |
| Executive function impairment           |
| Difficulty learning                     |
| Poor concentration                      |
| Anxiety                                 |
| Depression                              |

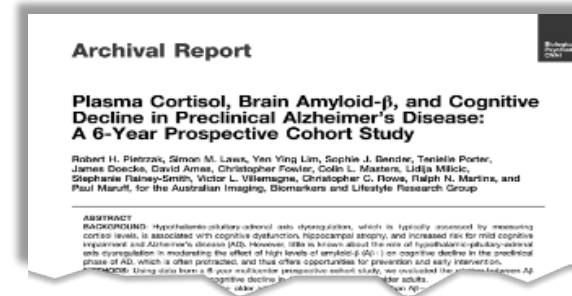
# Therapeutic cortisol worsened AD over 12 months

Historical trial of 10mg prednisone in patients with mild to moderate disease (n=138)

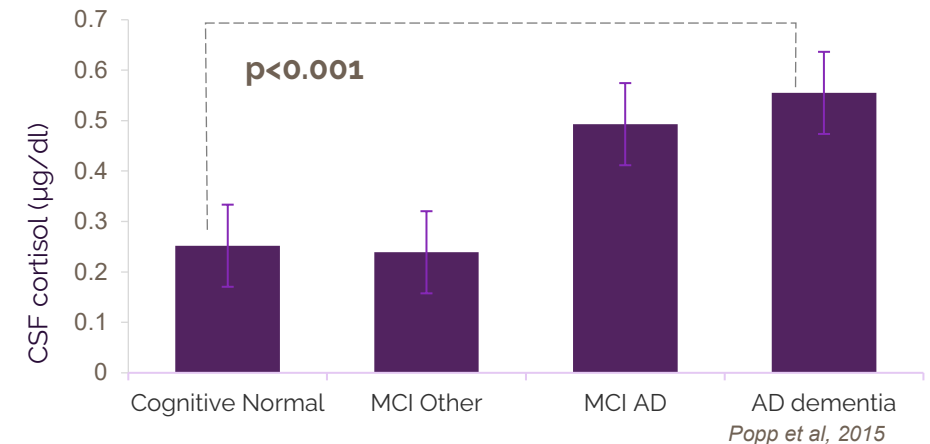


# Summary: Cortisol: guilty by association

- Multiple studies support the association between cortisol and AD development and progression<sup>1-5</sup>
- Cognitive impairment in patients with neuroendocrine dysfunction<sup>6-9</sup>
- Compelling evidence provided by the Australian Imaging, Biomarker & Lifestyle Study of Ageing (AIBL) study (2017)<sup>5</sup>
  - Higher plasma cortisol leads to a much greater risk of developing AD
  - Cortisol accelerates toxic effects of A $\beta$  on decline in global cognition, episodic memory, and attention
- Individuals with the APOE- $\epsilon$ 4 allele have higher CSF cortisol<sup>8</sup>
- Higher CSF cortisol levels in AD patients are associated with more rapid clinical worsening and cognitive impairment<sup>10,11</sup>
- High cortisol and low folate predict probable Alzheimer's disease after age 75<sup>12</sup>



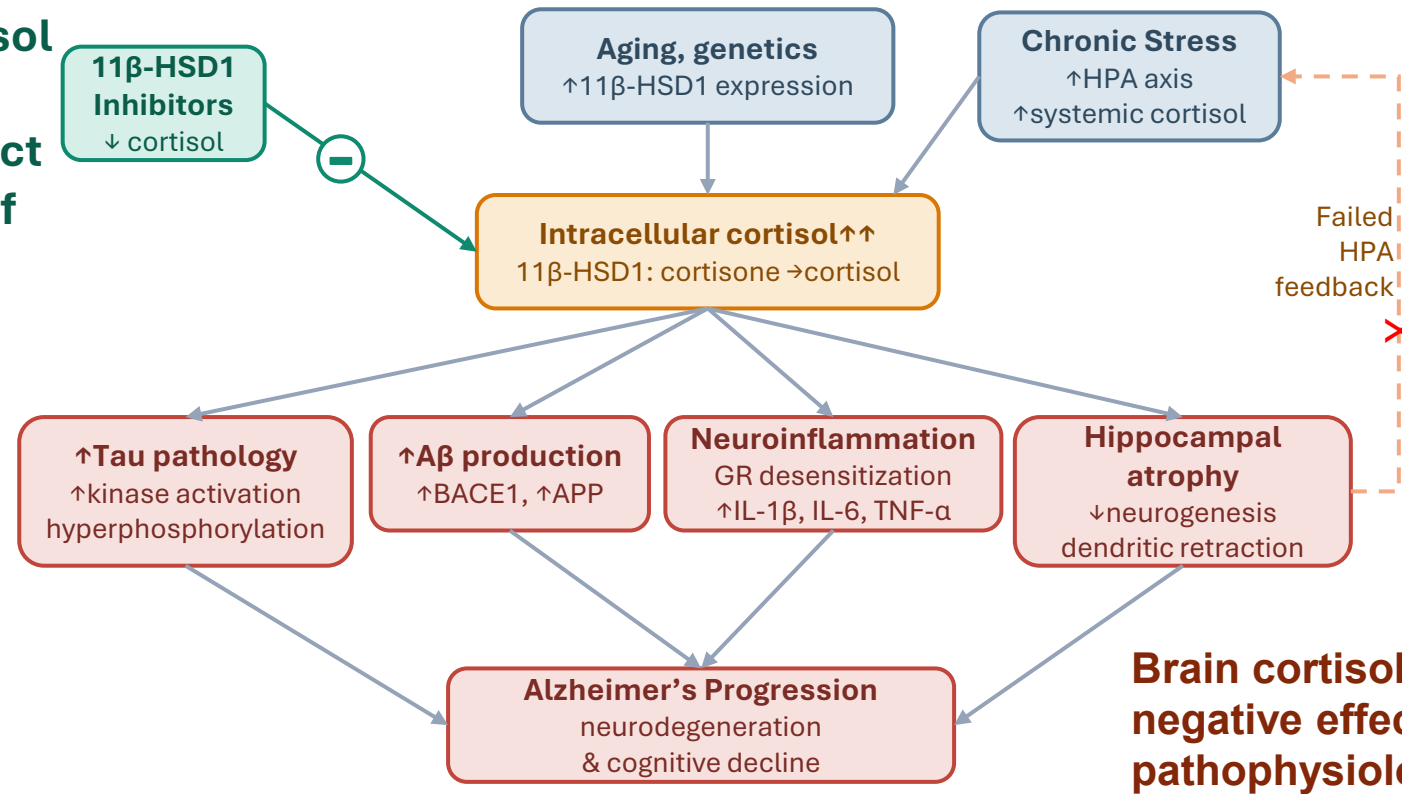
## MEAN CSF CORTISOL LEVELS



# Potential benefits of 11 $\beta$ -HSD1 inhibition affect multiple disease pathways

11 $\beta$ -HSD1 inhibitors limit tissue synthesis of cortisol

Xanomem may counteract the deleterious effects of elevated brain cortisol

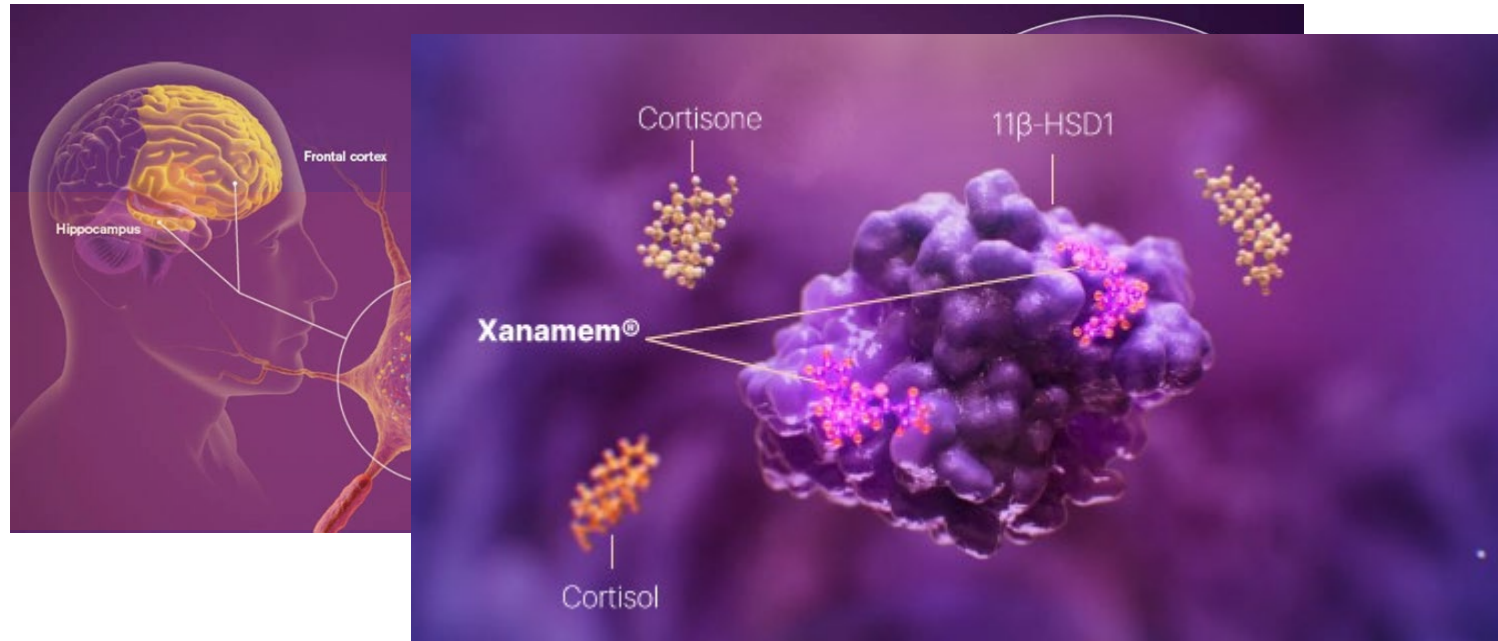


**Brain cortisol has multiple negative effects in AD pathophysiology**

# Once-daily oral treatment with a unique mechanism

Xanamem is a selective cortisol synthesis inhibitor (11 $\beta$ -HSD1 enzyme)

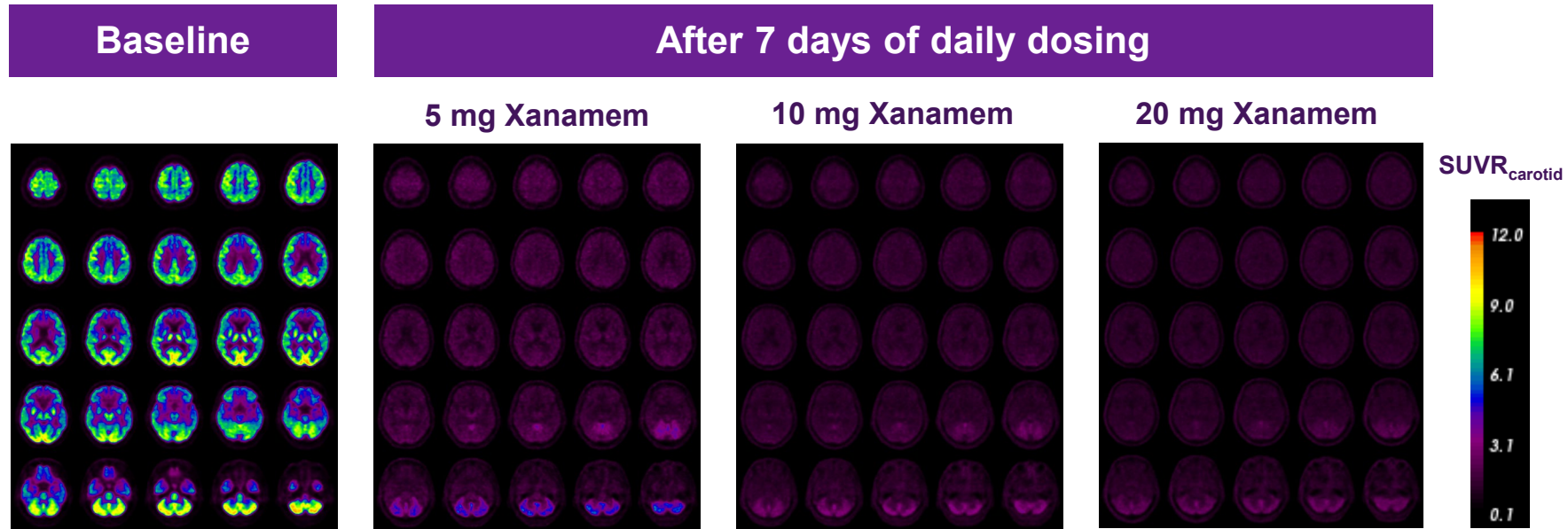
- ✓ Good safety profile in ~400 treated
- ✓ Brain-penetrant at low doses (5-10mg)
- ✓ Potentially disease-modifying in AD
- ✓ Anti-depressant activity in phase 2
- ✓ Low drug interaction potential ideal for combination therapy



**Mouse experimental studies, brain cortisol levels & human clinical trials validate cortisol as a target for the treatment of AD**

# Xanamem achieves high brain target occupancy

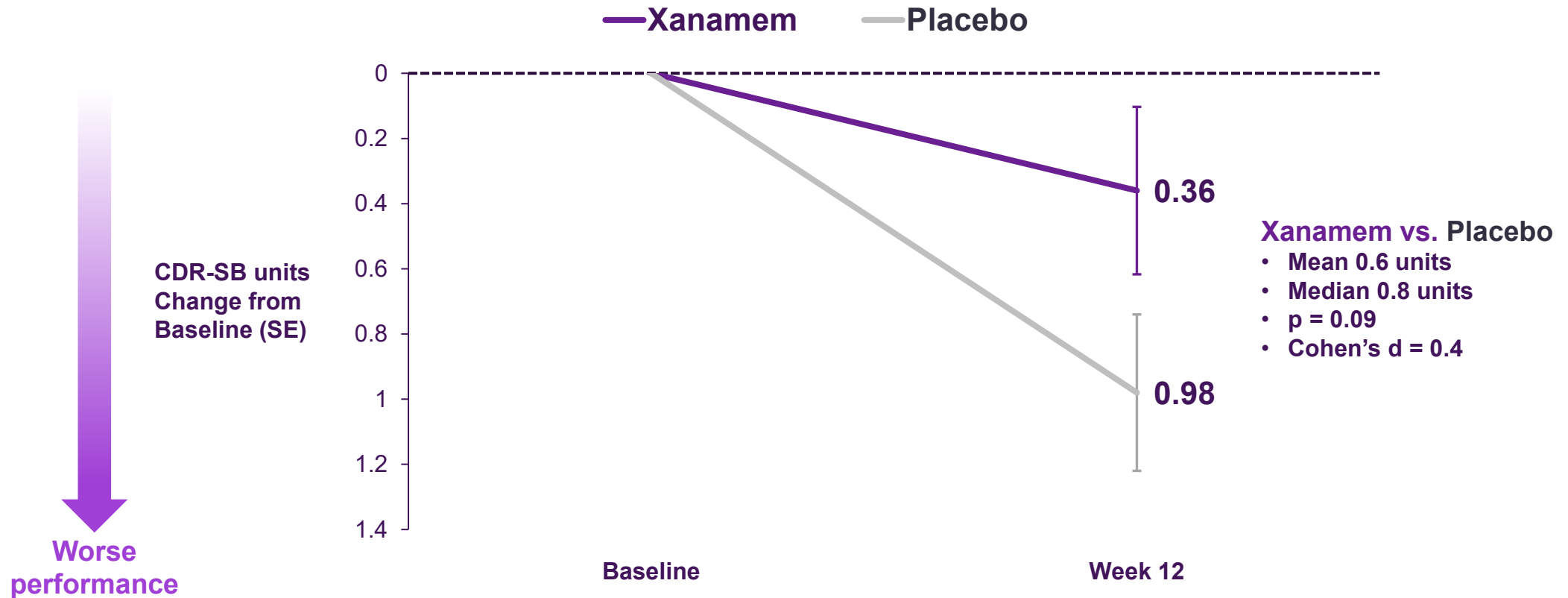
Distribution of cortisol synthesis enzyme  $11\beta$ -HSD1 shown in left panel



**Reduction in tracer signal (loss of color) indicates high  $11\beta$ -HSD1 occupancy**  
**Strong target occupancy observed across evaluated clinical doses**

# Large Xanamem benefit<sup>1</sup> in high pTau181<sup>2</sup> patients (1)

Phase 2a biomarker study: major slowing of CDR-SB decline over 12 weeks (n=34)



Journal of Alzheimer's Disease 100 (2024) 139–150  
 Plasma pTau181 Predicts Clinical Progression in a Phase 2 Randomized Controlled Trial of the 11-HSD1 Inhibitor Xanamem® for Mild Alzheimer's Disease  
 Jack Taylor, Mark Jaros, Christopher Chen, John Harrison and Dana Hilt

1. Using a linear extrapolation to 18 months 5-6x better than anti-amyloid antibody therapy  
 2. Pre-specified in SAP as above the median

## Large Xanamem benefit in high pTau181 patients (2)

*Twice as many patients in the Xanamem group had stable or improved disease compared with placebo<sup>1</sup>*

*... meaning 56% of patients treated with Xanamem were stable or improved vs. 28% in placebo*

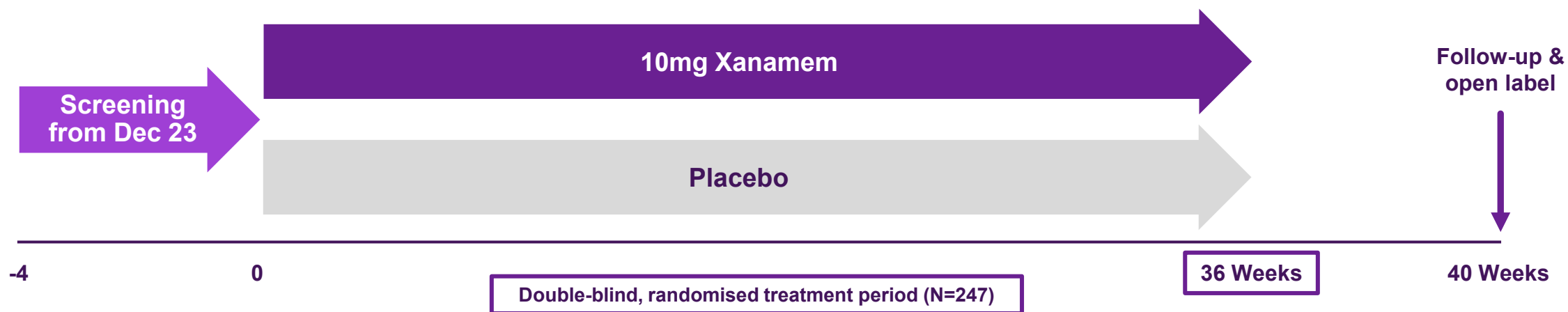
*Large effect size vs. placebo of 0.6 – 0.8 units over 12 weeks*

**Xanamem 10 mg protected the majority of AD patients from progression**

1. Where CDR-SB decreased or was unchanged - Xanamem 9 of 16 (56%) vs. Placebo 5 of 18 (28%)

# XanaMIA phase 2b/3 trial in Alzheimer's disease

Final study results November 2026



| Key Inclusion Criteria                                                                                                                                                          | Primary Endpoint                                                                                             | Key Secondary Endpoints                                                                                                                                                                                  | Implementation                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Blood pTau biomarker positive</li> <li>(pTau181 &gt;1.6 pg/ml)</li> <li>Mild-moderate Alzheimer's by NIA-AA clinical criteria</li> </ul> | <ul style="list-style-type: none"> <li><b>CDR-SB (functional and cognitive measure) @36 weeks</b></li> </ul> | <ul style="list-style-type: none"> <li>Cognitive Test Battery (7 cognitive measures well-validated in the Alzheimer's field)</li> <li>Amsterdam Activity of Daily Living (functional measure)</li> </ul> | <ul style="list-style-type: none"> <li>Enrolment at 15 Australian &amp; 20 US sites</li> <li>*2 yr open-label extensions phase open and enrolling</li> </ul> |

# Xanamem for the treatment of Major Depressive Disorder (MDD)

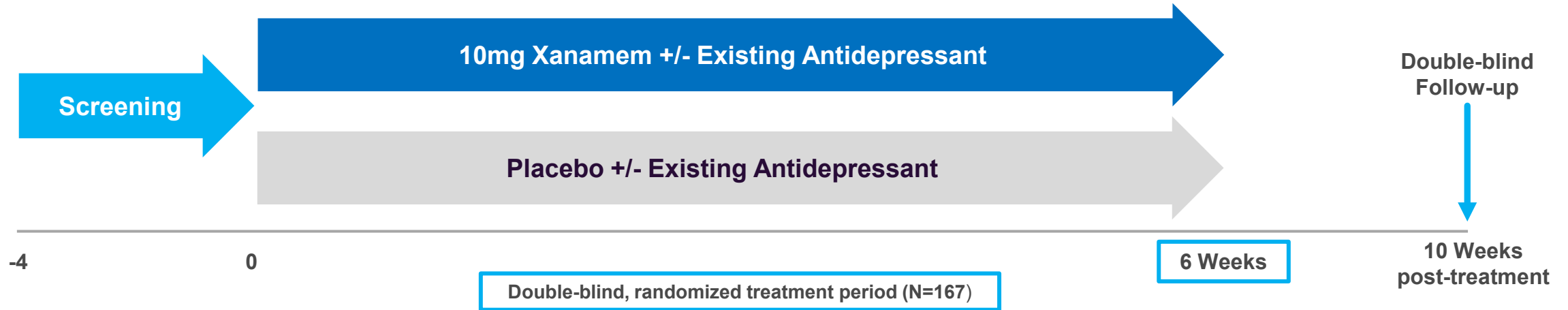
Phase 2 study of difficult-to-treat MDD patients with:

1. Significant residual depression (HamD  $\geq 17$ )
2. Measurable cognitive deficit ( $\geq 0.5$  SD deficit on a coding test vs. normal)

# XanaCIDD trial design and methods – completed CY2024



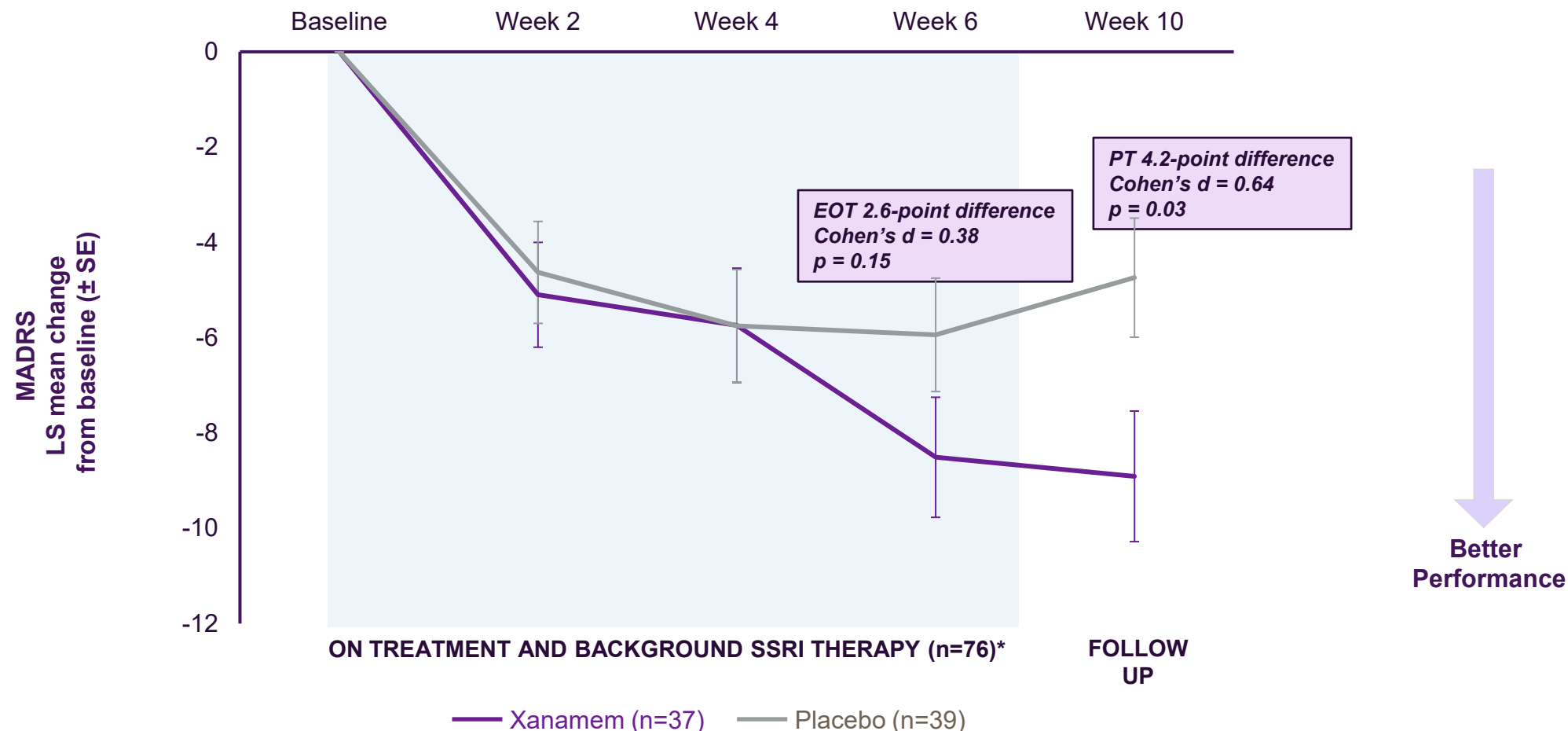
Phase 2, double-blind, proof-of-concept controlled trial to assess safety and efficacy  
Enrolled MDD patients that have both depression and measurable cognitive deficit



| Primary Endpoint                                                                                                                            | Key Secondary Endpoints                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"><li>• <b>Cogstate Cognitive Test Battery Attention Composite</b> (attention and working memory)</li></ul> | <ul style="list-style-type: none"><li>• Montgomery-Åsberg Depression Rating Scale (<b>MADRS</b>)</li><li>• Patient Global Impression-Severity (<b>PGI-S</b>)</li><li>• Other MDD and cognitive measures</li></ul> |

# Durable antidepressant activity in phase 2 MDD trial

Separation from placebo overall and on background SSRI therapy\*



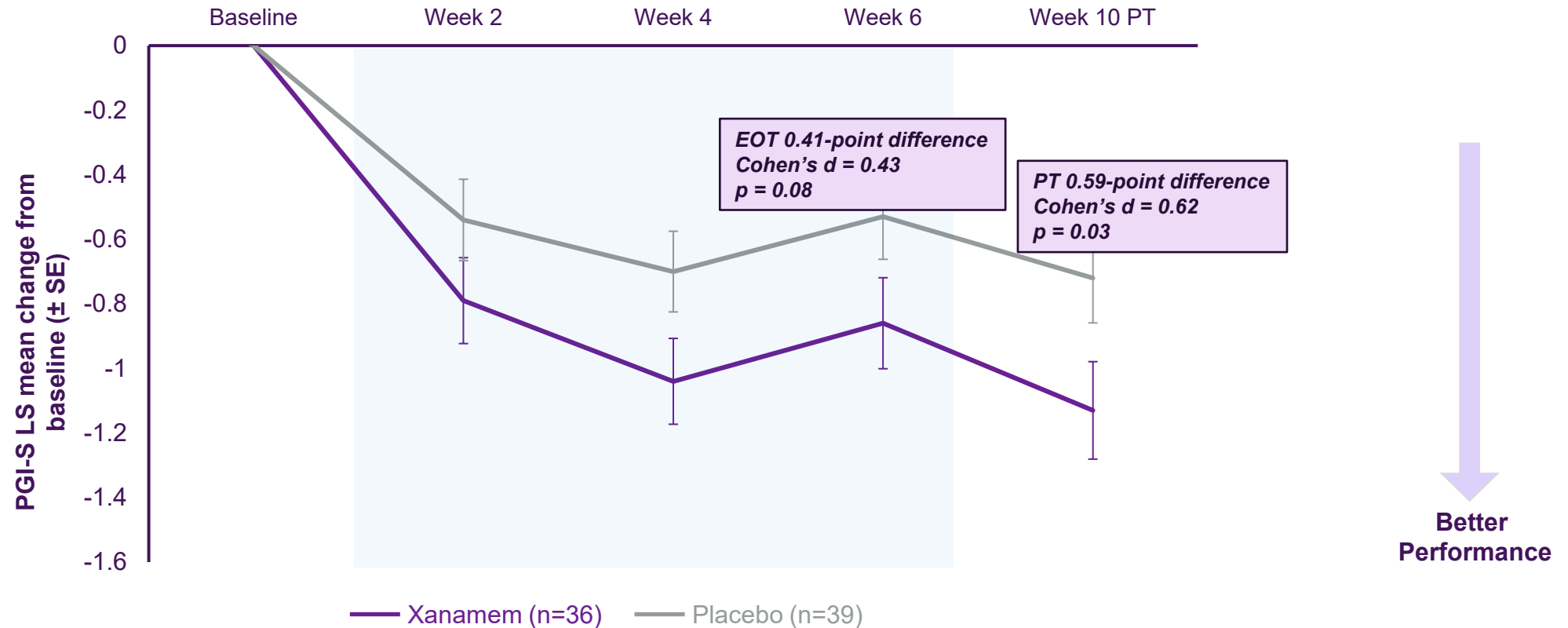
Abbreviations: SSRI, selective serotonin reuptake inhibitor.

\*Data from planned phase 3 population with background SSRI therapy shown; Taylor et. al. Brit J Psychiatry 1–8.

doi: 10.1192/bjp.2026.10689

# Self-reported benefit in patients taking SSRI (n=75)\*

Measured by Patient Global Impression – Severity score (PGI-S)



## Phase 2a MDD summary

- ✓ *Clinical benefit observed on both MADRS and PGI-S:*
  - ❖ *Clinically significant benefits commencing at the end of 6 weeks therapy maintained/increased after 4 weeks of blinded, off-treatment follow up*
- ✓ *Improvements observed in cognition in both treatment groups with no treatment benefit*
- ✓ *Contrary to widely held belief, change in depression symptoms and cognition over time did not correlate i.e. in this population, cognitive impairment did not improve alongside depression or vice versa*

**Xanamem 10 mg has anti-depressant activity worthy of further investigation**

# Summary: Xanamem - a potential new therapeutic in neuropsychiatry

An oral, selective and CNS-penetrant 11 $\beta$ -HSD1 inhibitor

- ✓ *Xanamem is a selective 11 $\beta$ -HSD1 inhibitor that inhibits brain cortisol synthesis*
- ✓ *Safe and well tolerated in more than 500 people treated*
- ✓ *Clinical activity observed in two phase 2a trials:*
  - ❖ *Biomarker-confirmed mild/mod Alzheimer's disease (n=34)*
  - ❖ *Difficult-to-treat depression (n=165)*
- ✓ *Phase 2b/3 AD trial topline final results will become available in November 2026*
- ✓ *Potential to expand to treat other neuropsychiatric conditions*

# Thank you

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