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Nyrada Advances Xolatryp™ Towards Phase IIa Trial in Cardioprotection

Highlights:

- Phase IIa trial planned for Xolatryp targeting patients with acute myocardial infarction.
- Phase IIa will seek to assess safety and explore efficacy in patients with ST-Elevation Myocardial Infarction (STEMI) undergoing Percutaneous Coronary Intervention (PCI).
- Indicative study design incorporates 150 patients to power a randomised, double-blind, placebo-controlled clinical trial in Australia, testing two doses of Xolatryp administered as a 6-hour infusion.
- Trial commencement targeted for first quarter of calendar 2026, pending completion of Phase I clinical trial and Human Research Ethics Committee (HREC) approval.
- The final Phase I cohort participants have been dosed and discharged from the Phase I unit with no adverse safety signals reported.

Nyrada Inc (ASX:NYR), a clinical stage drug discovery and development company focused on advancing treatments across a portfolio of indications through innovative Transient Receptor Potential Canonical (TRPC) ion channel inhibition, today announced its intention to progress Xolatryp™ into a Phase IIa clinical trial for the treatment of acute myocardial infarction (AMI).

Nyrada's Phase I trial of Xolatryp is nearing completion. Combined with strong preclinical evidence for cardioprotection in an infarct model, this provides the Company with confidence to commit to a Phase IIa clinical trial for this therapeutic indication.

The Phase IIa trial design seeks to evaluate Xolatryp as a first-in-class intravenous therapy to limit heart muscle damage and prevent arrhythmias during ischemia and after reperfusion in patients with ST-Elevation Myocardial Infarction (STEMI) that undergo Percutaneous Coronary Intervention (PCI[1]).

Acute STEMI is a leading cause of mortality and a major contributor to the growing health economic burden. A STEMI occurs when the coronary artery is blocked, impeding blood flow to an area in the heart, causing this region to become ischemic due to a lack of oxygen.

[1] PCI is a non-surgical, catheter-based procedure, often referred to as angioplasty. It is used to open narrowed or blocked coronary arteries and restore blood flow to the heart muscle.

The standard treatment for STEMI is PCI, which involves inserting a catheter into the artery to remove the blockage and restore blood flow to the affected tissue and achieve vascular patency. However, the sudden return of the oxygen-rich blood to this ischemic area leads to reperfusion injury, contributing to the overall loss of functional heart tissue.

There are no approved therapies that directly address ischemia and reperfusion injury, which significantly contribute to long-term cardiac damage following AMI. Xolatryp aims to fill this critical unmet therapeutic gap.

Phase IIa Clinical Trial

Nyrada's indicative Phase IIa trial design envisages the enrolment of up to 150 STEMI patients in Australia, evaluating two dosage levels of Xolatryp with infusion durations of up to six hours. The Phase IIa trial is expected to commence in the first quarter of calendar 2026, pending completion of the Phase I study and approval by the Human Research Ethics Committee (HREC).

The primary endpoint of the trial will be safety, with secondary endpoints including indications of functional cardiac outcomes. These endpoints are supported by strong preclinical data in animal models, robust GLP-compliant safety and toxicology studies, and a promising safety and tolerability profile from Nyrada's near completed Phase I healthy volunteer study.

Nyrada is currently refining the design of the Phase IIa study and will provide further details once cost estimates are firmed.

Nyrada CEO James Bonnar commented: "This is a significant advancement for Nyrada and for patients who suffer from heart attacks. Reperfusion injury remains a serious unmet medical need, and Xolatryp offers a promising new approach with the potential to reduce cardiac events and prevent long-term heart damage.

"With a solid scientific basis and encouraging Phase I results, we are confident that this next phase will bring us closer to delivering a new class of therapy that could improve outcomes and reduce uncertainty and risk for millions of patients."

Strategic Focus

Xolatryp has shown strong preclinical efficacy in three major indications: stroke, traumatic brain injury (TBI), and acute myocardial infarction (AMI). Academic research also points to additional therapeutic potential.

However, given the strength of Nyrada's preclinical cardiac data and the current limited non-dilutive funding options available for TBI in the US, the company has made a strategic decision to prioritise development in cardioprotection. As such, Nyrada will allocate the majority of its financial and human resources to advancing Xolatryp in this area.

At the same time, Nyrada will continue progressing its stroke and TBI programs, explore new pipeline opportunities, and actively seek non-dilutive funding in Australia, the US, and other key markets.

Large and Growing Market Opportunity

The addressable market for Xolatryp in treating treatment AMI is significant.

It is estimated that approximately 950,000 PCIs are performed annually in the US. It is also estimated that the PCI market size was US$11.7 billion in 2024 and is expected to grow at a CAGR of 10.03%.

Governance and Oversight

The indicative trial design has been reviewed and endorsed by Nyrada's Scientific Advisory Board and Clinical Consultant. Nyrada will continue to refine the specifics of the Phase IIa protocol with leading interventional cardiologists to provide expert input prior to HREC submission.

Phase I Trial Progress

On 14 July 2025, Nyrada announced the successful completion of Cohort 5 (of six) in its Phase I clinical trial. This trial is evaluating the safety, tolerability and pharmacokinetics of Xolatryp. As with the previous four cohorts, no safety signals, dose-limiting toxicities, or unexpected side effects were reported.

On 21 July 2025, Nyrada announced that the final patients in Cohort 6 of its Phase I clinical trial were successfully dosed and released from the Scientia Clinical Trial facility with no adverse safety signals reported. This milestone marked the completion of the dosing phase for all six cohorts in this healthy human volunteer study. The trial's Safety Review Committee (SRC) is yet to consider the data from Cohort 6, but is expected to meet in early August 2025 once all data has been collected.

The final Phase I trial readouts are expected in the September 2025 quarter.

About Xolatryp™

Nyrada is developing Xolatryp (previously known as NYR-BI03), a first-in-class small-molecule cardioprotection and neuroprotection therapy. Xolatryp has demonstrated preclinical efficacy as an acute treatment following ischemic stroke, traumatic brain injury (TBI) and acute myocardial infarction (AMI). As noted, a Phase I clinical trial, which assesses the safety, tolerability, and pharmacokinetics of Xolatryp in healthy human volunteers, is nearing completion.

Two independent commercial research organisations (CROs) have demonstrated preclinical efficacy of Xolatryp in protecting structure and function in the heart in coronary infarct models. Reported across 2024 and 2025, the October 2024 Nyrada announcement reported an 86% cardioprotective effect with a 6-hour treatment following myocardial ischemic-reperfusion injury, and echocardiography assessment showed significant improvements in heart function and structure.

Study findings released in May 2025 demonstrated Xolatryp provided 42% cardioprotection when administered continuously for only 3 hours. In addition to protecting the irreplaceable heart tissue and reducing injury biomarker levels, the incidence of arrhythmias, including ventricular fibrillation and ventricular tachycardia, the leading causes of sudden cardiac death, was significantly reduced.

Further to the efficacy of TRPC ion channel-targeting of Xolatryp in protecting excitable tissues from calcium ion dysregulation–induced pathology, in February 2024, Nyrada announced preclinical stroke study results showing a statistically significant neuroprotective effect, rescuing 42% of brain tissue in the penumbra region of the brain.

In April 2025, Nyrada announced the results of a preclinical traumatic brain injury study, which showed that Xolatryp provided a statistically significant (p = 0.043) neuroprotective effect following a penetrating traumatic brain injury. This study was undertaken in collaboration with the Walter Reed Army Institute of Research and UNSW Sydney.

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About Nyrada Inc.

Nyrada Inc. is a clinical stage biotechnology company focused on the discovery and development of innovative small-molecule therapies, specifically targeting Transient Receptor Potential Canonical (TRPC) ion channels. The company's lead candidate, Xolatryp™, has shown efficacy in both neuroprotection and cardioprotection, positioning it for a first-in-human Phase I clinical trial. Nyrada Inc. (ARBN 625 401 818) is incorporated in Delaware, US, with limited liability for its stockholders.

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