

Nirsevimab demonstrated protection against respiratory syncytial virus disease in healthy infants in Phase 3 trial

- * Respiratory Syncytial Virus (RSV) is the leading cause of hospitalization in all infants.¹⁻⁵
- * Nirsevimab is being investigated as a first-in-class single dose immunization to provide protection for all infants entering their first RSV season.
- * Nirsevimab met its Phase 3 primary endpoint earlier than anticipated; regulatory submissions for all-infant indication to begin in 2022.

PARIS – April 26, 2021 – Positive topline results from the Phase 3 MELODY trial showed nirsevimab reduced lower respiratory tract infections (LRTI) requiring medical attention (inpatient or outpatient) due to respiratory syncytial virus (RSV) in healthy preterm and term infants. RSV is the most common cause of LRTI and the leading cause of hospitalizations in all infants.¹⁻⁵

Nirsevimab reached its primary endpoint, achieving a statistically significant absolute reduction of LRTI caused by RSV in healthy preterm and term infants compared to placebo through a typical RSV season. No clinically meaningful differences in safety results between the nirsevimab and placebo groups were seen. The overall safety profile of nirsevimab in the trial remains consistent with previously reported results.

Results will be presented at an upcoming scientific congress and are anticipated to form the basis of regulatory submissions.

“Despite respiratory syncytial virus being the leading cause of pneumonia and bronchiolitis in the first year of life, there is no routine preventative option currently approved for all infants,” said Dr William Muller, Associate Professor, Pediatrics, Northwestern University Feinberg School of Medicine and Scientific Director, Clinical and Community Trials, Ann & Robert H. Lurie Children’s Hospital of Chicago, Illinois, US and primary investigator of the MELODY Phase III trial. *“These exciting trial data demonstrate the potential for nirsevimab to change the prevention landscape not only by providing protection to a broad population of infants across the full respiratory syncytial virus season, but also by achieving this with a single dose.”*

Nirsevimab, being developed in partnership with AstraZeneca, is the first investigational extended half-life monoclonal antibody (mAb) aiming to protect all infants entering their first RSV season, when they are at highest risk for severe RSV disease.^{1,6,7} With

nirsevimab, a protective antibody is administered directly to the infant with the goal of providing rapid protection.

In contrast to other options for RSV under development, such as maternal vaccines, nirsevimab was designed to be administered at birth to infants born during the RSV season or at the season's start for infants born prior to the season.

“Respiratory syncytial virus is the leading cause of hospitalizations in all infants,” said Jean-François Toussaint, Global Head of Research and Development, Sanofi Pasteur. “In fact, most hospitalizations occur in otherwise healthy infants born at term. It’s clear all infants need protection from RSV, and we hope nirsevimab becomes an important addition to routine immunization schedules.”

“These ground-breaking results mark a major scientific advancement in our effort to provide protection against respiratory syncytial virus for all infants. Nearly all children will contract the virus before age two, leading to nearly 30 million acute lower respiratory tract infections globally each year,” said Mene Pangalos, Executive Vice President, BioPharmaceuticals R&D, AstraZeneca. “Nirsevimab has the potential to provide a significant public health benefit as the first respiratory syncytial virus immunization for the general infant population, and these data bring us one step closer to delivering nirsevimab to infants worldwide.”

Nirsevimab is also being evaluated in a Phase II/III MEDLEY trial which will assess the safety and tolerability of nirsevimab compared to Synagis (palivizumab) among preterm infants and children with chronic lung disease (CLD) and congenital heart disease (CHD) entering their first and second RSV seasons. The Phase II/III trial is also expected to complete early with first data anticipated in the coming months.

About the Phase 3 MELODY study

The Phase 3 study is a randomized, placebo-controlled trial designed to determine the incidence of medically attended lower respiratory tract infections (LRTI) due to Reverse Transcriptase Polymerase Chain Reaction (RT-PCR) confirmed RSV through 150 days post-dose versus placebo in healthy infants entering their first RSV season. Healthy late preterm and term infants of 35 weeks 0 days or greater gestational age were randomised (2:1) to receive a single 50mg (in infants weighing <5kg) or 100mg (in infants weighing ≥5kg) intramuscular injection of nirsevimab or placebo. Between July 2019 and February 2021 approximately 1,500 infants were dosed with either nirsevimab or placebo at the RSV season start. Research was conducted by AstraZeneca in 21 countries. An additional 1,500 infants will be enrolled in the Northern and Southern Hemispheres to complete the safety evaluation.

Last July detailed results from the positive Phase 2b trial for nirsevimab were published in the NEJM which showed a significant reduction in medically attended lower respiratory tract infections, mainly bronchiolitis and pneumonia, and hospitalizations caused by respiratory syncytial virus (RSV) in healthy preterm infants.

About RSV

RSV is a common, contagious virus that infects the respiratory tract, causing millions of hospitalizations globally in infants, and is the most common cause of bronchiolitis and pneumonia in children younger than one year.^{1-5,8,9} Hospitalization rates due to RSV infection are consistently highest in the first year of life – with infants under one year representing 75% of RSV hospitalizations in children under 5 years.^{2,10,11} Most hospitalizations for RSV occur in otherwise healthy infants born at term.^{2,11-13} Moreover, medically-attended LRTIs are associated with increased costs to the healthcare system.¹⁴

About nirsevimab

Nirsevimab is an extended half-life RSV mAb being developed as a passive immunization for the prevention of LRTI caused by RSV. It is designed for use in a broad infant population, including all infants experiencing their first RSV season and infants with congenital heart disease or chronic lung disease entering their first and second RSV season.^{15,16}

Nirsevimab is designed to provide RSV protection via an antibody given directly to an infant to help prevent LRTI caused by RSV, unlike active immunization, where a person's immune system is activated to prevent or fight infection through a vaccine.¹⁷ Passive immunization could offer rapid protection unlike active immunization, which can take weeks to develop protection.¹⁷

In March 2017, AstraZeneca and Sanofi announced an [agreement](#) to develop and commercialize nirsevimab. Under the terms of the agreement, AstraZeneca leads all development activity through initial approvals and retains manufacturing activities and Sanofi will lead commercialization activities. Nirsevimab is currently under clinical investigation and its safety and efficacy have not been reviewed by any regulatory authority.

Editor's note: In January 2021, nirsevimab received the [Promising Innovative Medicine \(PIM\) Designation](#) from the UK Medicines and Healthcare Products Regulatory Agency (MHRA) and was also granted the Breakthrough Therapy Designation (BTD) by the China Center for Drug Evaluation (CDE) under the National Medical Products Administration. In February 2019, the US Food and Drug Administration granted [Breakthrough Therapy Designation](#) for nirsevimab for the prevention of LRTI caused by RSV, and the European Medicines Agency (EMA) granted access to its [PRiority Medicines \(PRIME\) scheme](#) for the same indication. In Japan, nirsevimab was also selected by the Japan Agency for Medical Research and Development (AMED) as “a medicine for prioritized development” under the Project for Drug Selection to Promote New Drug Development in Pediatrics.

About Sanofi

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