The Lancet Infectious Diseases Publishes Results from Paratek's Phase 3 Oral only Dosing Study of NUZYRA® (omadacycline) for Skin Infections

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Once-daily NUZYRA is non-inferior to twice-daily oral linezolid for the treatment of adults with ABSSSI, including MRSA; confirms efficacy and safety of oral-only formulation

BOSTON, Aug. 30, 2019 (GLOBE NEWSWIRE) -- Paratek Pharmaceuticals, Inc. (NASDAQ:PRTK), a commercial-stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics, announced *The Lancet Infectious Diseases*published detailed results from the OASIS-2 Phase 3 clinical trial of NUZYRA (omadacycline). Once-daily, oral NUZYRA met all primary and secondary clinical study endpoints and was shown to be safe and effective for the treatment of acute bacterial skin and skin structure infections (ABSSSI).

NUZYRA is a modernized tetracycline that is a once-daily intravenous (IV) and oral formulation for the treatment of community-acquired bacterial pneumonia (CABP) and ABSSSI. NUZYRA was approved by the U.S. Food and Drug Administration on October 2, 2018 for the treatment of adults with CABP and ABSSSI and is now commercially available in the United States.

"The incidence of skin infections that require hospitalization has substantially increased due, in part, to the emergence of community-acquired MRSA. These infections are estimated to cause almost 900,000 hospital admissions and 3.4 million emergency department visits each year and place a significant financial burden on the healthcare system," said Keith Kaye, MD, MPH, Director of Research in the Division of Infectious Diseases at the University of Michigan Medical Center. "The demonstrated efficacy of NUZYRA's oral-only dosing regimen offers prescribers the potential to reduce the need for hospital admission to treat serious infection and the overall associated costs."

One of three pivotal, Phase 3 clinical studies demonstrating the efficacy and safety of NUZYRA in skin infections and pneumonia, OASIS-2 (Omadacycline in Acute Skin Structure Infections Study), evaluated the efficacy and safety of once-daily, oral-only NUZYRA compared to twice-daily oral-only linezolid in 735 adults with ABSSSI. OASIS-2 demonstrated that NUZYRA was non-inferior to linezolid for treating ABSSSI, with a similar safety profile. Efficacy was consistent across study populations, type of skin infection and causative pathogen including methicillin-susceptible and methicillin-resistant *Staphylococcus aureus* (MRSA) infections. These account for nearly half of all ABSSSI isolates in the United States.

In the modified intent-to-treat population (mITT), NUZYRA (n=360) met the FDA-specified primary endpoint of statistical non-inferiority (NI) (10% NI margin, 95% confidence interval) compared to linezolid (N=360) at the early clinical response (ECR), 48 to 72 hours after the first dose of study drug. The ECR rate for NUZYRA as 87.5% compared to 82.5% for linezolid.

Additionally, NUZYRA met statistical NI compared to linezolid for the EMA-specified co-primary endpoints at the post therapy evaluation (PTE), 7 to 14 days after completion of therapy in the mITT and the Clinically Evaluable (CE) populations. Clinical success rates at PTE in the mITT population for the NUZYRA and linezolid arms were 84.2% vs. 80.8%, respectively; and in the CE population were 97.9% vs. 95.5%, respectively.

Efficacy observed in OASIS-2 was consistent and similar to results from the OASIS-1 study, which evaluated the efficacy and safety of an IV to oral once-daily NUZYRA against twice-daily linezolid.

In the OASIS-2 study, there was a low rate of study treatment discontinuation for both omadacycline and linezolid patients at 10.9% vs. 14.2%, respectively. Less than 2% of patients discontinued treatment due to adverse events in both treatment groups. No deaths occurred in the NUZYRA treatment arm.

The most common treatment emergent adverse events (TEAEs) in NUZYRA- and linezolid-treated patients were nausea (30.2% vs. 7.6%, respectively) and vomiting (16.8% vs. 3.0%, respectively). Seventy-five percent of the nausea in the NUZYRA treated group was classified as mild with none reported as severe, and only one NUZYRA patient discontinued treatment for gastrointestinal events. Onset of nausea or vomiting in NUZYRA patients occurred more frequently during the loading-dose phase on days one or two (25.3% and 12.5% respectively), compared to nausea or vomiting rates of </=5% after day two. The median duration of these episodes was two days.

Additional TEAEs, occurring in > 3% of NUZYRA patients were wound infection (6.0%), increased alanine aminotransferase (ALT; 5.2%), increased aspartate aminotransferase (AST; 4.6%), diarrhea (4.1%), headache (3.5%) and cellulitis (3.3%), which were generally comparable between treatment arms. No subject in either treatment group developed *Clostridium difficile*infection.

"Results from OASIS-2 demonstrate that once-daily, oral-only NUZYRA is an effective, well-tolerated monotherapy across multiple types of skin infections and bacterial pathogens—including resistant pathogens such as MRSA," said Evan Loh, M.D., CEO of Paratek. "The publication of our third pivotal Phase 3 clinical study is affirmation of the clinical impact NUZYRA can play in supporting the battle against the growing health challenge of antibiotic resistance."

About Paratek Pharmaceuticals, Inc.
Paratek Pharmaceuticals, Inc. is a commercial-stage biopharmaceutical company focused on the development and commercialization of innovative therapeutics. The company's lead commercial product, NUZYRA® (omadacycline), which has launched and is available in the U.S., is a once-daily oral and intravenous antibiotic for the treatment of adults with community-acquired bacterial pneumonia and acute bacterial skin and skin structure infections. Paratek is also studying NUZYRA for the treatment of urinary tract infections (UTI).

Paratek has submitted a marketing authorization application of omadacycline in the European Union. Paratek has entered into a collaboration agreement with Zai Lab for the development and commercialization of omadacycline in the greater China region and retains all remaining global rights.

Under a research agreement with the U.S. Department of Defense, omadacycline also is being studied against pathogenic agents causing infectious diseases of public health and biodefense importance, including plague and anthrax.

SEYSARA™ (sarecycline) is an FDA-approved product with respect to which we have exclusively licensed certain rights in the United States to Almirall, LLC, or Almirall. SEYSARA is currently being marketed by Almirall in the U.S. as a new once-daily oral therapy for the treatment of moderate to severe acne vulgaris. Paratek retains development and commercialization rights with respect to sarecycline in the rest of the world.

Recognizing the serious threat of bacterial infections, Paratek is dedicated to providing solutions that enable positive outcomes and lead to better patient stories. For more information, visit www.ParatekPharma.com or follow @ParatekPharma on Twitter.

About NUZYRA
NUZYRA (omadacycline) is a novel antibiotic with both once-daily intravenous (IV) and oral formulations for the treatment of community-acquired bacterial pneumonia (CABP) and acute bacterial skin and skin structure infections (ABSSSI). A modernized tetracycline, NUZYRA is specifically designed to overcome tetracycline resistance and exhibits activity across a spectrum of bacteria, including Gram-positive, Gram-negative, atypicals, and other drug-resistant strains.

Indications and Usage
NUZYRA is a tetracycline class antibiotic indicated for the treatment of adult patients with the following infections caused by susceptible microorganisms:

Community-Acquired Bacterial Pneumonia (CABP) caused by the following:
Streptococcus pneumoniae, Staphylococcus aureus (methicillin-susceptible isolates), Haemophilus influenzae, Haemophilus parainfluenzae, Klebsiella pneumoniae, Legionella pneumophila, Mycoplasma pneumoniae, and Chlamydophila pneumoniae.

Acute Bacterial Skin and Skin Structure Infections (ABSSSI) caused by the following:
Staphylococcus aureus (methicillin-susceptible and -resistant isolates), Staphylococcus lugdunensis, Streptococcus pyogenes, Streptococcus anginosus grp. (includes S. anginosus, S. intermedius, and S. constellatus), Enterococcus faecalis, Enterobacter cloacae, and Klebsiella pneumoniae.

Usage
To reduce the development of drug-resistant bacteria and maintain the effectiveness of NUZYRA and other antibacterial drugs, NUZYRA should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria.

Important Safety Information
Contraindications
NUZYRA is contraindicated in patients with known hypersensitivity to omadacycline or tetracycline class antibacterial drugs, or to any of the excipients.

Warnings and Precautions
Mortality imbalance was observed in the CABP clinical trial with eight deaths (2%) occurring in patients treated with NUZYRA compared to four deaths (1%) in patients treated with moxifloxacin. The cause of the mortality imbalance has not been established. All deaths, in both treatment arms, occurred in patients >65 years of age; most patients had multiple comorbidities. The causes of death varied and included worsening and/or complications of infection and underlying conditions. Closely monitor clinical response to therapy in CABP patients, particularly in those at higher risk for mortality.

The use of NUZYRA during tooth development (last half of pregnancy, infancy and childhood to the age of 8 years) may cause permanent discoloration of the teeth (yellow-gray-brown) and enamel hypoplasia.

The use of NUZYRA during the second or third trimester of pregnancy, infancy and childhood up to the age of 8 years may cause irreversible inhibition of bone growth.

Hypersensitivity reactions have been reported with NUZYRA. Life-threatening hypersensitivity (anaphylactic) reactions have been reported with other tetracycline-class antibacterial drugs.

NUZYRA is structurally similar to other tetracycline-class antibacterial drugs and is contraindicated in patients with known hypersensitivity to tetracycline-class antibacterial drugs.
Discontinue NUZYRA if an allergic reaction occurs.

Clostridium difficile-associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents and may range in severity from mild diarrhea to fatal colitis. Evaluate if diarrhea occurs.

NUZYRA is structurally similar to tetracycline-class of antibacterial drugs and may have similar adverse reactions. Adverse reactions including photosensitivity, pseudotumor cerebri, and anti-anabolic action which has led to increased BUN, azotemia, acidosis, hyperphosphatemia, pancreatitis, and abnormal liver function tests, have been reported for other tetracycline-class antibacterial drugs, and may occur with NUZYRA. Discontinue NUZYRA if any of these adverse reactions are suspected.

Prescribing NUZYRA in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

Adverse Reactions
The most common adverse reactions (incidence ≥ 2%) are nausea, vomiting, infusion site reactions, alanine aminotransferase increased, aspartate aminotransferase increased, gamma-glutamyl transferase increased, hypertension, headache, diarrhea, insomnia, and constipation.

Drug Interactions
Patients who are on anticoagulant therapy may require downward adjustment of their anticoagulant dosage while taking NUZYRA.

Absorption of tetracyclines, including NUZYRA is impaired by antacids containing aluminum, calcium, or magnesium, bismuth subsalicylate and iron containing preparations.

Use in Specific Populations
Lactation: Breastfeeding is not recommended during treatment with NUZYRA

To report SUSPECTED ADVERSE REACTIONS, contact Paratek Pharmaceuticals, Inc. at 1-833-727-2835 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Please see full Prescribing Information for NUZYRA at www.NUZYRA.com.

Forward Looking Statements
This press release contains forward-looking statements including statements related to our overall strategy, products, prospects and potential. All statements, other than statements of historical facts, included in this press release are forward-looking statements, and are identified by words such as “advancing,” “believe,” “expect,” “well positioned,” “look forward,” “anticipated,” “continued,” and other words and terms of similar meaning. These forward-looking statements are based upon our current expectations and involve substantial risks and uncertainties. We may not actually achieve the plans, carry out the intentions or meet the expectations or projections disclosed in our forward-looking statements and you should not place undue reliance on these forward-looking statements. Our actual results and the timing of events could differ materially from those included in such forward-looking statements as a result of these risks and uncertainties. These and other risk factors are discussed under "Risk Factors" and elsewhere in our Annual Report on Form 10-K for the year ended December 31, 2017, our Form 10-Q filed for the quarter ended September 30, 2018 and our other filings with the Securities and Exchange Commission. We expressly disclaim any obligation or undertaking to update or revise any forward-looking statements contained herein.

CONTACTS:

Investor and Media Relations:
Ben Strain
617-807-6688
ir@ParatekPharma.com

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