



Soliris(R) Demonstrates Reductions in Hemolysis and Improvements in Fatigue, Overall Quality of Life and Anemia in a Broad Population of PNH Patients

Results of SHEPHERD Phase III Open Label Trial Published in Online Edition of the Journal Blood

CHESHIRE, Conn., Dec 04, 2007 /PRNewswire-FirstCall via COMTEX News Network/ -- Soliris(R) (eculizumab) therapy reduced hemolysis and improved fatigue, overall quality of life and anemia in a diverse population of patients with a rare blood disorder called paroxysmal nocturnal hemoglobinuria (PNH), according to an analysis of the Phase III SHEPHERD study published online in *Blood*, the journal of the American Society of Hematology. The article is currently available at <http://bloodjournal.hematologylibrary.org/cgi/content/abstract/blood-2007-06-094136v1> and will be published in a future print edition of *Blood*.

Soliris, Hemolysis and PNH

Soliris, developed by Alexion Pharmaceuticals, Inc. (Nasdaq: ALXN), is the first therapy approved for the treatment of patients with PNH, a rare, debilitating and life-threatening blood disorder defined by the destruction of red blood cells, or hemolysis. Soliris is indicated for the treatment of patients with PNH to reduce hemolysis. In patients with PNH, hemolysis can cause thromboses, kidney disease, liver dysfunction, disabling fatigue, impaired quality of life, recurrent pain, shortness of breath, pulmonary hypertension, intermittent episodes of dark colored urine (hemoglobinuria), and anemia.(1-3)

Efficacy in a Broader Population

"The data from the SHEPHERD study confirm the earlier findings from the placebo-controlled TRIUMPH study," said Robert A. Brodsky, M.D., lead author of the SHEPHERD publication and Director, Division of Hematology and Associate Professor of Medicine and Oncology, The Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins University School of Medicine. "The improvements in symptoms and signs of this debilitating disease were observed irrespective of baseline levels of hemolysis and degree of thrombocytopenia. Importantly, SHEPHERD encompassed a broad group of patients who are typical of the type of patients that are seen day to day in practice."

SHEPHERD examined the safety and efficacy of eculizumab in a broader, more diverse population of PNH patients than the TRIUMPH study by allowing enrollment of patients with minimal transfusion requirements and/or evidence of thrombocytopenia to enter the trial. A total of 69 patients (71%) in the SHEPHERD study would not have met the inclusion criteria for entry into the companion Phase III double-blind placebo-controlled TRIUMPH trial.(4)

Clinical Data

The online publication in *Blood*, titled "Multicenter phase III study of the complement inhibitor eculizumab for the treatment of patients with paroxysmal nocturnal hemoglobinuria" reported data from the 97 patients, enrolled at 33 international sites, studied in the non-placebo controlled open-label Soliris Phase III SHEPHERD trial. The primary efficacy endpoint in this 52-week, open-label study was hemolysis, as measured by serum lactate dehydrogenase (LDH) levels. LDH is released during red blood cell destruction. Every patient treated with Soliris had a substantial reduction in hemolysis as measured by levels of LDH. LDH was reduced from a mean of 2201 plus or minus 105 U/L at baseline to 297 plus or minus 21 U/L at 52 weeks ($P < 0.001$).

"In addition to the universal improvement in hemolysis, patients in SHEPHERD experienced significant improvements in fatigue, overall quality of life, and anemia," said Leonard Bell, M.D., chief executive officer of Alexion. "For many patients, treatment with Soliris results in life-changing improvements in daily living. The beneficial impact of eculizumab on multiple aspects of patients' lives observed in both SHEPHERD and TRIUMPH reinforces Alexion's goal that every patient who can benefit from Soliris will have access to Soliris."

Fatigue, as measured by the FACIT-Fatigue instrument, significantly improved within one week of eculizumab treatment; this improvement was maintained throughout the 52 weeks of the study period ($P < 0.001$). The mean plus or minus SE change from baseline in FACIT-Fatigue score at 52 weeks was 12.2 plus or minus 1.1 ($P < 0.001$).

Quality of life assessments were also determined using the EORTC QLQ-C30 instrument. A significant improvement in fatigue scores was demonstrated on the EORTC QLQ-C30 fatigue scale by study week 1; this improvement was maintained at each study visit through week 52 ($P < 0.001$, mixed model analysis). Significant improvement in scores was shown with the instrument for global health status ($P < 0.001$), on all 5 scales for patient functioning ($P < 0.001$), on all 3 symptom scales (P less than or

equal to 0.002), and on 4 of 6 single-item measures ($P < 0.001$).

Soliris treatment also led to an improvement in anemia. The increase in hemoglobin occurred despite a reduction in transfusion requirements from a median of 8.0 units of packed red cells per patient during the year prior to the study to 0.0 units per patient during the 52 week study ($P < 0.001$). Overall, transfusions were reduced 52% from a mean of 12.3 to 5.9 units of packed red cells per patient. Forty-nine patients (51%) achieved transfusion independence for the entire study period. Improvements in hemolysis, fatigue, and transfusion requirements with Soliris were independent of baseline levels of hemolysis and degree of thrombocytopenia.

About PNH

PNH is an acquired genetic blood disorder defined by hemolysis, in which patients' red blood cells are destroyed by complement, a component of the body's immune system. PNH is a rare disease that affects an estimated 8,000 to 10,000 people in North America and Western Europe.⁽⁵⁾ PNH often strikes people in the prime of their lives, with an average age of onset in the early 30's.⁽⁶⁾ Approximately ten percent of all patients first develop symptoms at 21 years of age or younger.⁽³⁾ PNH develops without warning and can occur in men and women of all races, backgrounds and ages. PNH often goes unrecognized, with delays in diagnosis often ranging from one to more than 10 years.⁽²⁾ The estimated median survival for PNH patients is between 10 and 15 years from the time of diagnosis.^(2,6)

PNH has been identified more commonly among patients with disorders of the bone marrow, including aplastic anemia (AA) and myelodysplastic syndrome (MDS).^(7,8,9,10) In patients with thrombosis of unknown origin, PNH may be an underlying cause.^(3,11) Prior to approval of Soliris, there were no therapies specifically available for the treatment of PNH. PNH treatment was limited to symptom management through periodic blood transfusions, non-specific immunosuppressive therapy and, infrequently, bone marrow transplantation -- a procedure that carries considerable mortality risk.^(3,11)

About Soliris(R)

Soliris (eculizumab) was approved in March 2007 by the U.S. Food and Drug Administration (FDA) as the first treatment for PNH, a rare, debilitating and life-threatening blood disorder defined by hemolysis, or the destruction of red blood cells. In June 2007, the European Commission (EC) also approved the use of Soliris (eculizumab) for the treatment of patients with PNH. Soliris is the first therapy approved in Europe for the treatment of PNH and was the first medicinal product to receive EU approval under the EMEA Accelerated Assessment Procedure.

Important Safety Information

Soliris is generally well tolerated. The most frequent adverse events observed in clinical studies were headache, nasopharyngitis (a runny nose), back pain and nausea. Treatment with Soliris should not alter anticoagulant management because the effect of withdrawal of anticoagulant therapy during Soliris treatment has not been established.

The U.S. product label for Soliris also includes a boxed warning: "Soliris increases the risk of meningococcal infections. Vaccinate patients with a meningococcal vaccine at least two weeks prior to receiving the first dose of Soliris; revaccinate according to current medical guidelines for vaccine use. Monitor patients for early signs of meningococcal infections, evaluate immediately if infection is suspected, and treat with antibiotics if necessary." During clinical studies, two out of 196 vaccinated PNH patients treated with Soliris experienced a serious meningococcal infection. Prior to beginning Soliris therapy, all patients and their prescribing physicians are enrolled in the Soliris Safety Registry which is part of a special risk management program that involves initial and continuing education and long- term monitoring for detection of new safety findings.

Please see full prescribing information at www.soliris.net.

About Alexion

Alexion Pharmaceuticals, Inc. is a biotechnology company working to develop and deliver life-changing drug therapies for patients with serious and life-threatening medical conditions. The Company is engaged in the discovery, development and commercialization of therapeutic products aimed at treating patients with a wide array of severe disease states, including hematologic diseases, cancer, and autoimmune disorders. The Company is evaluating other potential indications for Soliris as well as other formulations of eculizumab for additional clinical indications, and is actively pursuing development of other antibody product candidates in early stages of development. This press release and further information about Alexion Pharmaceuticals, Inc. can be found at: www.alexionpharm.com.

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Safe Harbor Statement

This news release contains forward-looking statements, including statements related to potential benefits and commercial potential for Soliris, and interest about Soliris in the patient, physician and payor communities. Forward-looking statements are subject to factors that may cause Alexion's results and plans to differ from those expected, including for example, decisions of regulatory authorities regarding marketing approval or material limitations on the marketing of Soliris, delays in arranging satisfactory manufacturing capability and establishing commercial infrastructure, the possibility that results of clinical trials are not predictive of safety and efficacy results of Soliris in broader patient populations, the possibility that initial results of commercialization are not predictive of future rates of adoption of Soliris, the risk that third parties won't agree to license any necessary intellectual property to us on reasonable terms or at all, the risk that third party payors will not reimburse for the use of Soliris at acceptable rates or at all, the risk that estimates regarding the number of PNH patients are inaccurate, the risk that pending litigation may be resolved adversely, and a variety of other risks set forth from time to time in Alexion's filings with the Securities and Exchange Commission, including but not limited to the risks discussed in Alexion's Quarterly Report on Form 10-Q for the period ended September 30, 2007 and in our other filings with the Securities and Exchange Commission. Alexion does not intend to update any of these forward-looking statements to reflect events or circumstances after the date hereof, except when a duty arises under law.

- (1) Rother RP, Bell L, Hillmen P, et al. The clinical sequelae of intravascular hemolysis and extracellular plasma hemoglobin: a novel mechanism of human disease. *JAMA*. 2005;293:1653-1662.
- (2) Hillmen P, Lewis SM, Bessler M, Luzzatto L, Dacie JV. Natural history of paroxysmal nocturnal hemoglobinuria. *N Engl J Med* 1995; 333:1253-1258.
- (3) Parker C, Omine M, Richards S, et al. Diagnosis and management of paroxysmal nocturnal hemoglobinuria. *Blood*. 2005;106:3699-3709.
- (4) Hillmen P, Young NS, Schubert J, et al. The complement inhibitor eculizumab in paroxysmal nocturnal hemoglobinuria. *N Engl J Med*. 2006;355:1233-1243.
- (5) Hill A, Platts PJ, Smith A et al. The incidence and prevalence of paroxysmal nocturnal hemoglobinuria (PNH) and survival of patients in Yorkshire [abstract]. *Blood*. 2006;108(11):985.
- (6) Socie G, Mary J Yves, de Gramont A, et al. Paroxysmal nocturnal haemoglobinuria: long-term follow-up and prognostic factors. *Lancet* 1996; 348:573-577.
- (7) Johnson RJ, Hillmen P. Paroxysmal nocturnal hemoglobinemia: Nature's gene therapy? *J Clin Path: Mol Pathol*. 2002;55:145-152.
- (8) Wang, et al. Clinical significance of a minor population of paroxysmal nocturnal hemoglobinuria-type cells in bone marrow failure syndrome. *Blood* 2002;100:3897-3902.
- (9) Iwanga, et al. Paroxysmal nocturnal haemoglobinuria clones in patients with myelodysplastic syndromes. *Brit J Haem*. 1998; 102:465-474.
- (10) Maciejewski, et al. Relationship between bone marrow failure syndromes and the presence of glycoposphatidyl inositol-anchored protein- deficient clones. *Brit J Haem*. 2001;115:1015-1022.
- (11) Hill A, Richards S, Hillmen P. Recent developments in the understanding and management of paroxysmal nocturnal haemoglobinuria. *British Journal of Haematology* 2007; 137:3, 181-192.

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