Avadel Presents Data on Quality of Life Improvement in Patients on NOCTIVA™ at American Urological Association Western Annual Meeting

October 29, 2018

Patients treated with NOCTIVA were three times more likely to report no difficulty getting enough sleep and five times more likely to report no bother due to nocturia

DUBLIN, Ireland, Oct. 29, 2018 (GLOBE NEWSWIRE) -- Avadel Pharmaceuticals plc (Nasdaq: AVDL), a company focused on providing innovative medicines for chronic urological, central nervous system, and sleep disorders, today announced details of its poster presentation detailing quality of life (QoL) health-related outcomes data from a Phase 3 randomized, double-blind pivotal study of AV002, NOCTIVA(desmopressin acetate) Nasal Spray, in patients with nocturia due to nocturnal polyuria on October 28, 2018 at the American Urological Association Western Section annual meeting in Maui, Hawaii.

Nocturia, waking two or more times to urinate, is a highly prevalent, under-recognized condition associated with disrupted sleep, reduced productivity, and negative impacts on overall health and health-related quality of life (QoL). Nocturia is one of the most bothersome lower urinary tract symptoms, and an increase in frequency of nocturic voids is correlated with an increase in the degree of bother experienced by patients. [1],[2],[3],[4],[5] Nocturnal polyuria (NP), or the overproduction of urine at night, is the most common cause of nocturia, occurring in up to 80 percent of patients.[6] NOCTIVA is the lowest effective and safe dose of desmopressin available to treat nocturia due to NP in adults.

Details of the poster can be found below:

Quality of Life Improvement in Nocturia Patients on NOCTIVA™ (AV002), an Emulsified Microdose Desmopressin Nasal Spray

Data was gathered using the FDA-validated Impact of Nighttime Urination (INTU) questionnaire. Changes in QoL measures were assessed using overall, daytime and nighttime domain scores, percentage of patients who reported no difficulty sleeping, and percentage of patients who reported not being bothered by nocturia. Bother due to nocturia was reported as “Not at All”; “Somewhat”; “Quite a Bit”; “Very Much.” Five hundred and eighty patients age 50 and older with NP at screening and a history of two or more nocturic voids per night for six months or longer were randomized to treatment with 1.66 mcg or 0.83 mcg of NOCTIVA, or placebo for 12 weeks.

At the end of 12 weeks, both doses of NOCTIVA reduced INTU overall. 41 percent of patients treated with 1.66 mcg and 35 percent of those treated with 0.83 mcg reported no difficulty getting enough sleep, compared to only 14 and 15 percent at baseline, respectively. In addition, 40 percent of the patients treated with 1.66 mcg and 35 percent treated with 0.83 reported no bother due to nocturia, compared to 8 and 12 percent at baseline, respectively. These results show that NOCTIVA has an effective therapeutic impact on quality of life as measured by INTU.

Kathleen C. Kobashi, Department of Urology, Virginia Mason Medical Center, Seattle, Washington, lead author, remarked, “Improving patients’ ability to get enough sleep is crucial to how they feel and function on a daily basis. The FDA-validated INTU questionnaire to assess improvements in patients’ health-related quality of life was the first of its kind, and the data from INTU demonstrated an impressive improvement in quality of life and ability to get enough sleep for patients being treated with NOCTIVA.”

About NOCTIVA
NOCTIVA is the lowest effective and safe dose of desmopressin available to treat nocturia due to nocturnal polyuria in adults who awaken at least 2 times per night to void. NOCTIVA is administered via nasal spray, offering patients the simplicity of one spray in one nostril one time a night. NOCTIVA has flexible dosing and is available in 0.83 mcg and 1.66 mcg. For more information, please visit www.noctiva.com.

WARNING: HYPONATREMIA

See full prescribing information for complete boxed warning.

Important Safety Information for NOCTIVA (desmopressin acetate) Nasal Spray
WARNING: HYPONATREMIA

- **NOCTIVA can cause hyponatremia, which may be life-threatening if severe.**
- **NOCTIVA is contraindicated in patients at increased risk of severe hyponatremia, such as patients with excessive fluid intake, illnesses that can cause fluid or electrolyte imbalances, and in those using loop diuretics or systemic or inhaled glucocorticoids.**
- **Ensure serum sodium is normal before starting or resuming NOCTIVA. Measure serum sodium within seven days and approximately one month after initiating therapy or increasing the dose, and periodically during treatment. More frequently monitor serum sodium in patients 65 years of age and older and in patients at increased risk of hyponatremia.**
- **If hyponatremia occurs, NOCTIVA may need to be temporarily or permanently discontinued.**

INDICATIONS AND USAGE
NOCTIVA is a vasopressin analog indicated for the treatment of nocturia due to nocturnal polyuria in adults who awaken at least 2 times per night to void.

Limitation of Use: Not studied in patients younger than 50 years of age.

CONTRAINDICATIONS

- Hyponatremia or a history of hyponatremia
- Polydipsia
- Primary nocturnal enuresis
- Concomitant use with loop diuretics or systemic or inhaled glucocorticoids
- Estimated glomerular filtration rate below 50 mL/min/1.73 m^2
- Syndrome of inappropriate antidiuretic hormone secretion (SIADH)
- During illnesses that can cause fluid or electrolyte imbalance
- New York Heart Association (NYHA) Class II-IV congestive heart failure
- Uncontrolled hypertension

WARNINGS AND PRECAUTIONS

- Fluid retention: Not recommended in patients at risk of increased intracranial pressure or history of urinary retention. Monitor volume status in patients with NYHA Class I congestive heart failure.
- Nasal conditions: Discontinue in patients with concurrent nasal conditions that may increase absorption, until resolved.

ADVERSE REACTIONS
Common adverse reactions in clinical trials (incidence >2%) included nasal discomfort, nasopharyngitis, nasal congestion, sneezing, hypertension / blood pressure increased, back pain, epistaxis, bronchitis and dizziness.

DRUG INTERACTIONS
Monitor serum sodium more frequently when NOCTIVA is concomitantly used with drugs that may cause water retention and increase the risk for hyponatremia (e.g., tricyclic antidepressants, selective serotonin re-uptake inhibitors, chlorpromazine, opiate analgesics, nonsteroidal anti-inflammatories, lamotrigine and carbamazepine).

USE IN SPECIFIC POPULATIONS

- Pregnancy: Use of NOCTIVA is not recommended.
- Pediatric: Do not use NOCTIVA for primary nocturnal enuresis in children.

To report SUSPECTED ADVERSE REACTIONS, contact Avadel at 1-877-638-4579 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch.

Please see the full Prescribing Information for NOCTIVA™ at www.Noctiva.com/prescribing-information.

About Avadel Pharmaceuticals
Avadel Pharmaceuticals plc (Nasdaq:AVDL) is a specialty pharmaceutical company that seeks to develop differentiated pharmaceutical products that are safe, effective and easy to take through formulation development, by utilizing its proprietary drug delivery technology and through in-licensing / acquiring new products; ultimately, helping patients adhere to their prescribed medical treatment and see better results. Avadel's current portfolio of products and product candidates focuses on the urology, central nervous system (CNS) / sleep, and hospital markets. The Company is headquartered in Dublin, Ireland with operations in St. Louis, Missouri and Lyon, France. For more information, please visit www.avadel.com.

Safe Harbor: *This press release may include forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. The words "will," "may," "believe," "expect," "anticipate," "estimate," "project" and similar expressions, and the negatives thereof, identify forward-looking statements, each of which speaks only as of the date the statement is made. Although we believe that our forward-looking statements are based on reasonable assumptions within the bounds of our knowledge of our business and operations, our business is subject to significant risks and as a result there can be no assurance that actual results of our research, development and commercialization activities and our results of operations will not differ materially from the results contemplated in such forward-looking statements. These risks include: (i) risks relating to our exchangeable senior notes including use of the net proceeds from the offering of the notes and other future events related to the notes; (ii) risks relating to the divestiture of our former pediatric business including whether such divestiture will be accretive to our operating income and cash flow; (iii) risks relating to our license agreement with Serenity Pharmaceuticals, LLC including that a potential competitive product, and patent litigation with the manufacturer of that product, could have a material adverse impact on our ability to successfully exploit any market opportunity for the drug desmopressin acetate (the "Drug") which we are marketing under the brand name Noctiva ™, our internal analyses may overstate the market opportunity in the United States for the Drug or we may not effectively exploit such market opportunity, that significant safety or drug interaction problems could arise with respect to the Drug, that we may not successfully increase awareness of nocturia and the potential benefits of the Drug, and that the need for management to focus attention on the development and commercialization of the Drug could cause our ongoing business operations to suffer; and (iv) the other risks, uncertainties and contingencies described in the Company's filings with the U.S. Securities and Exchange Commission, including our annual report on Form 10-K for the year ended December 31, 2017, in particular disclosures that may be set forth in particular under the captions "Forward-Looking Statements" and "Risk Factors," including without limitation: our dependence on a small number of products and customers for the majority of our revenues; the possibility that our Bloxiverz®,Vazculep® and Akovaz® products, which are not patent protected, could face substantial competition resulting in a loss of market share or forcing us to reduce the prices we charge for those products; the possibility that we could fail to successfully complete the research and development for pipeline products we are evaluating for potential application to the FDA pursuant to our "unapproved-to-approved" strategy, or that competitors could complete the development of such products and apply for FDA approval of such products before us; the possibility that our products may not reach the commercial*

market or gain market acceptance; our need to invest substantial sums in research and development in order to remain competitive; our dependence on certain single providers for development of several of our drug delivery platforms and products; our dependence on a limited number of suppliers to manufacture our products and to deliver certain raw materials used in our products; the possibility that our competitors may develop and market technologies or products that are more effective or safer than ours, or obtain regulatory approval and market such technologies or products before we do; the challenges in protecting the intellectual property underlying our drug delivery platforms and other products; and our dependence on key personnel to execute our business plan.

Contacts:

Lauren Stival
Avadel Sr. Director, Investor Relations and Corporate Communications
Phone: (636) 449-5866
Email: lstival@avadel.com

Sara Dunn
JPA Health, Media Relations
Phone: (202) 591-4045
Email: sdunn@jpa.com

1.Coyne KS, et al. *BJU Int*. 2003;92(9):948-954.
2. Weiss JP. *Rev Urol*. 2012;14(3-4):48-55.
3. Chen FY, et al. *Int Urogynecol J Pelvic Floor Dysfunct*. 2007;18(4):431-436.
4. Kobelt G, et al. *BJU Int*. 2003;91(3):190-195.
5. Tikkinen KA, et al. *Eur Urol*. 2010;57(3):488-496.
6. Weiss JP, et al. *J Urol*. 2011;186(4):1358-1363.

Avadel Pharmaceuticals plc