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Press release

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Treatment with once-monthly Abilify Maintena® (aripiprazole) significantly reduces hospitalisation rates for patients with schizophrenia compared with daily oral antipsychotics

- *Once-monthly Abilify Maintena® demonstrated a 10-fold reduction in hospitalisation rates when comparing the same patients with their previous standard of care with oral antipsychotics in a mirror-image study design (2.7 percent vs 27.1 percent respectively, p<0.0001)*[1]
- *Once-monthly Abilify Maintena® was well tolerated with rates of treatment emergent adverse events similar to the favourable tolerability profile of oral Abilify® (aripiprazole)*[2]
- *Reducing the risk of recurring relapses and readmissions early in the course of the illness may help minimise their negative impact on a patient's long-term prognosis and quality of life.*[3,4]

H. Lundbeck A/S (Lundbeck) and Otsuka Pharmaceutical Europe Ltd. (Otsuka) today announced results from the final analysis of a mirror-image study showing statistically significant reductions (p<0.0001) in total psychiatric hospitalisation rates in patients diagnosed with schizophrenia who were switched from oral antipsychotics to Abilify Maintena once-monthly 400 mg – a prolonged-release suspension for intramuscular injection of aripiprazole.[1] These findings were presented as a late breaker poster at the 4th Biennial Schizophrenia International Research Society (SIRS) conference in Florence, Italy on April 5–9.

In this multi-centre, open-label, North-American mirror-image study, patients with schizophrenia who had been treated with oral antipsychotics as standard of care*, were switched to Abilify Maintena once-monthly 400 mg and followed for 6 months in a naturalistic community setting.[5] The results from the Abilify Maintena treatment period were compared retrospectively with the treatment period on oral antipsychotics prior to the switch in the same patients and setting. The study primary endpoint showed that Abilify Maintena once-monthly 400 mg significantly reduced the rates of psychiatric hospitalisation by 10-fold during the last

three months versus prior oral antipsychotic [2.7 percent (n=9/336) vs 27.1 percent (n=91/336) respectively, p<0.0001].[1]

Abilify Maintena once-monthly 400 mg also significantly reduced the rates of psychiatric hospitalisations at six months compared with prior oral antipsychotics (8.8 percent [n=9/336] vs 38.1 percent [n=91/336] respectively, p<0.0001). The study found Abilify Maintena once-monthly 400 mg to be well tolerated, consistent with previously reported treatment emergent adverse events with oral Abilify.[2,6] The most common treatment emergent adverse events with greater than five percent incidence observed during the prospective treatment period with Abilify Maintena were insomnia (6.7 percent), and akathisia (6.5 percent).[1]

"Our ability to reduce the risk of relapse and rehospitalisation is critical in facilitating improvement in psychosocial and vocational functioning. With each relapse patients can lose hard won gains and find it more and more difficult to progress towards recovery," said study investigator John M. Kane, M.D., Chairman of Psychiatry, The Zucker Hillside Hospital, and Vice President, Behavioral Health Services, North Shore-LIJ Health System.

Hospitalisations in schizophrenia are most commonly a result of relapses, and protecting patients from relapse and hospital readmissions is a major goal in patient management. Minimising the risk of relapse early in the course of the illness may help to reduce the negative impact that recurring relapses and readmissions have on a patient's long-term prognosis and quality of life.[3,4]

In previous studies, long-acting injectable (LAIs) antipsychotics have demonstrated significant reductions in the risk of hospitalisation compared with oral antipsychotics[7] and may be particularly beneficial for patients with first-episode psychosis.[8] In patients hospitalised for the first time, the use of LAIs was shown to reduce the risk of readmission by 64 percent compared with oral formulations.[9]

Reducing hospitalisation rates through improved medication adherence is a key focus for improving functional outcomes in patients with schizophrenia and would also reduce associated healthcare costs,[10,11] as hospitalisation represents a significant portion of the overall economic burden of treating patients with schizophrenia.[12] The significant reduction of hospital rates observed in the mirror study data suggest that once-monthly Abilify Maintena may provide cost savings for healthcare services.[1,5]

*Including oral aripiprazole, asenapine, chlorpromazine, clozapine, fluphenazine, haloperidol, iloperidone, loxapine, lurasidone, olanzapine, paliperidone, perphenazine, pimozide, quetiapine, risperidone, thiothixene, and ziprasidone.

About the MIRROR Study

Mirror-image studies compare outcomes prior to and after a medication switch. This multicentre, open-label, North American study used a mirror-image design to assess total psychiatric hospitalisation rates – defined as the proportion of patients with more than one inpatient psychiatric hospitalization within 48 months prior to screening, but managed as outpatients for the 4 weeks prior to signing the Informed Consent Form and for the full duration of the screening period. The study was divided into two treatment periods: the first was a retrospective, six-month period assessing total psychiatric hospitalisation rates in stable adult patients with schizophrenia treated with oral antipsychotics; the second treatment period included these same patients who were then converted to treatment with Abilify Maintena once-monthly 400 mg, for six months.[1,5]

The primary endpoint was to compare psychiatric hospitalisation rates between oral antipsychotic treatment before and after switching from oral antipsychotics to Abilify Maintena once-monthly 400 mg.[5]

Patients included in the study (n=433) were deemed, in the investigator's judgment, to require a change in treatment for any reason (e.g. lack of efficacy, poor compliance, or side-effects) and have the potential to benefit from extended treatment with a long-acting injectable formulation.[1,5]

The study design for this North-American mirror-image study was in accordance with Abilify Maintena once-monthly 400 mg FDA-approved indication for the treatment of schizophrenia.[5]

About Abilify Maintena (aripiprazole)

Abilify Maintena is the only dopamine D_2 partial agonist in once-monthly, injectable form to receive marketing authorisation for maintenance treatment in schizophrenia. Physicians now have an alternative treatment option, with a tolerability profile comparable to the well-established oral Abilify (aripiprazole), to address the on-going need to protect patients with schizophrenia from relapse.

Abilify Maintena is a once-monthly formulation of aripiprazole in a sterile lyophilised powder that is reconstituted with sterile water. In Europe Abilify Maintena is indicated for maintenance treatment of schizophrenia in adult patients stabilised with oral aripiprazole.

After the first injection, treatment with 10 mg to 20 mg oral aripiprazole should be continued for 14 consecutive days to maintain therapeutic aripiprazole concentrations during initiation of therapy.

Abilify Maintena is available in a number of European countries and is progressing through the various healthcare authorities that provide access to patients. Abilify Maintena was also approved by the FDA for the treatment of schizophrenia in the US in February 2013 and has recently received a marketing authorisation for the maintenance treatment of schizophrenia in stabilised adult patients in Canada.

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About the Lundbeck and Otsuka Global Alliance

Lundbeck and Otsuka established a global alliance in November 2011 to bring to bear their considerable experience and resources in the CNS area to introduce next-generation treatments for conditions such as schizophrenia, depression, Alzheimer's disease and alcohol dependency.

About Otsuka

Otsuka Pharmaceutical Co., Ltd. is a global healthcare company with the corporate philosophy: 'Otsuka-people creating new products for better health worldwide.' Otsuka researches, develops, manufactures and markets innovative and original products, with a focus on pharmaceutical products for the treatment of diseases and nutraceutical products for the maintenance of everyday health.

In pharmaceuticals, Otsuka is a leading firm in the challenging area of mental health and also has research programs for several under-addressed diseases including tuberculosis, a significant global public health issue. These commitments illustrate more powerfully than

words how Otsuka is a “big venture” company at heart, applying a youthful spirit of creativity in everything it does.

Otsuka is a wholly owned subsidiary of Otsuka Holdings Co., Ltd., the holding company for the Otsuka Group. The chairman Akihiko Otsuka is the third generation of Otsuka family members to lead the business, whose origins date from 1921. The Otsuka Group employs approximately 42,000 people globally and its products are available in more than 80 countries worldwide. Consolidated sales were approximately €10 billion or USD 13 billion for fiscal year 2012 (4/1/2012-3/31/2013).

Otsuka Pharmaceutical Europe Ltd. (OPEL) was established in 1979. OPEL’s 550 employees focus on the development of innovative products and medical devices that address high unmet medical needs in therapy areas which include CNS, endocrinology, nephrology, gastroenterology and oncology. Sales and marketing operations in France, Germany, Italy, the Nordic region, Spain, Switzerland and the UK are supported by OPEL’s regional office based in west London, United Kingdom.

OPEL welcomes you to visit its European regional website at www.otsuka-europe.com.

About Lundbeck

H. Lundbeck A/S (LUN.CO, LUN DC, HLUYY) is a global pharmaceutical company specialized in brain diseases. For more than 50 years, we have been at the forefront of research within neuroscience. Our development and distribution of pioneering treatments continues to make a difference to people living with brain diseases. Our key areas of focus are alcohol dependence, Alzheimer’s disease, depression/anxiety, epilepsy, Huntington’s disease, Parkinson’s disease, schizophrenia and stroke.

Our approximately 6,000 employees in 57 countries are engaged in the entire value chain throughout research, development, production, marketing and sales, and are committed to improving the quality of life of people living with brain diseases. Our pipeline consists of several late-stage development programs and our products are available in more 100 countries. We have research centers in China, Denmark and the United States, and production facilities in China, Denmark, France, Italy and Mexico. Lundbeck generated revenue of approximately DKK 15 billion in 2013 (EUR 2.0 billion; USD 2.7 billion).

For further information please visit www.lundbeck.com.

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