Press release
Gothenburg, 16 July 2019

IRLAB reports top line results from Phase IIa study with IRL790

IRLAB today announced initial results from a first 28-Day Phase IIa trial with IRL790 in patients with advanced Parkinson's disease. The study objective was to evaluate the efficacy, safety and tolerability of IRL790 in patients with L-dopa induced dyskinesias (involuntary movements). Three independent methods were used to assess dyskinesias, the Unified Dyskinesia Rating Scale (UDysRS), Unified Parkinson's Disease Rating Scale (MDS-UPDRS) and standardized patient reported diaries. There was no difference, IRL790 vs. placebo, on dyskinesias measured with UDysRS total score but improvement vs. placebo was observed in MDS-UPDRS dyskinesia ratings and in dyskinesias reported with patient diaries. IRL790 was safe and well tolerated. The overall results in this first Phase IIa study, with indications of efficacy and lack of safety concerns, support further development of IRL790.

Analysis of UDysRS, the primary efficacy variable, showed no statistical difference between IRL790 and placebo in the per protocol analysis set (PPAS) or full analysis set (FAS). The other two prespecified assessments indicated that IRL790 reduced dyskinesias. Dyskinesia assessment using MDS-UPDRS (question 4.1+4.2) showed an improvement by IRL790 treatment (p=0.03 PPAS, p=0.07 FAS) as compared to placebo. Also, the patient reported diaries showed that IRL790 treatment, compared to placebo, significantly reduced the daily time with troublesome dyskinesias in ON state (p=0.03 PPAS, p=0.03 FAS).

IRL790 was well tolerated in the study. The mean dose of IRL790 at end of treatment was 16.2 mg daily. Three patients prematurely discontinued treatment, two due to adverse events, one treated with IRL790 and one with placebo, and one IRL790 treated patient due to withdrawal of consent. Any adverse event was reported by 78 % of placebo treated patients and 74% of IRL790 treated patients. The most common adverse events reported by system organ class (SOC) were nervous system disorders reported by 42% of placebo treated patients and 49% of IRL790 treated patients. There were 3 Serious Adverse Events (SAEs), none related to IRL790 treatment, 2 occurred during the screening period before randomization and 1 was reported for a patient treated with placebo. Cardiovascular assessments including blood pressure, heart rate, and ECG, showed no clinically relevant changes due to IRL790 treatment. Assessment of other motor symptoms of Parkinson's disease using MDS-UPDRS part II+III, MDS-UPDRS off-time assessment as well as 24-hour diaries showed that patients treated with IRL790 maintained their general motor functions and had no increase in OFF time.

Joakim Tedroff, CMO at IRLAB, commented "Dyskinesia is a burdensome symptom for patients with Parkinson's disease as it is affecting their everyday lives and limits optimization of L-Dopa treatment. The patient reported outcome in this study suggest that adding IRL790 to their otherwise stable anti-parkinsonian treatment can improve the quality of daily motor function by reducing troublesome dyskinesias. This outcome was also independently reflected in the UPDRS ratings but not in the UDysRS ratings. This discrepancy needs to be investigated further. Importantly, the excellent safety and tolerability profile observed for IRL790 treatment in this study provides additional reassurance that IRL790 is safe to use in this vulnerable patient population and supports a careful assessment of the continued clinical development of IRL790."

Nicholas Waters, CEO at IRLAB, commented "We are pleased that the study is completed. Given the ambiguity between UDysRS and the other two methods used to assess dyskinesias, further analyses aiming to clarify the underlying reasons will be prioritized to optimize the clinical path forward. Next planned clinical study with

IRL790 is in psychosis associated with Parkinson's disease, PD-P, while continuing CMC development and long-term toxicological studies".

The company will continue and complete analysis of the current Phase II study data. The full results of the study will be published in an international scientific journal.

About the study IRL790C003 (ClinicalTrials.gov Identifier: NCT03368170)

The Phase IIa study was randomized, double-blind, placebo-controlled and run at 16 sites in the UK and 4 sites in Sweden. 106 patients with Parkinson's disease and dyskinesia (involuntary movements) were screened for participation in the study and 75 patients, fulfilling inclusion criteria, were randomized to four weeks of treatment, 39 patients with IRL790 and 36 patients with placebo. 42 patients were male and 33 female and the mean age of the patients in the study was 66.6 years. Average duration of Parkinson's disease was 10.7 years.

IRL790 was taken twice daily (b.i.d.) as adjunctive treatment to the patients' regular and stable antiparkinsonian medication. The first two weeks of treatment comprised titration of placebo or IRL790 (10 to 20 mg daily) to the individually preferred and tolerated dose then used for the remaining two weeks. Tolerability and safety were continuously monitored.

About FAS and PPAS

The Full Analysis Set (FAS) consisted of all randomised and treated patients who received one or more doses and who provided post baseline data. The Per Protocol Set (PPS) consisted of patients from the FAS but excluded those with major protocol violations.

About IRL790

IRL790 is under development for the treatment of levodopa (L-dopa) induced dyskinesias (PD-LIDs), and psychosis in Parkinson's disease (PD-P). Dyskinesias are involuntary movements that often follows treatment with L-dopa. In pre-clinical studies, IRL790 reduces involuntary movements that occurs after a period of treatment with L-dopa. Additionally, in pre-clinical studies, IRL790 has shown antipsychotic properties. The company believes that IRL790 thus has the potential to simultaneously treat both dyskinesias and psychosis in Parkinson's disease.

About Unified Dyskinesia Rating Scale (UDysRS)

The Unified Dyskinesia Ratings Scale (UDysRS) evaluates the involuntary movements that can be associated with long-term treatment with dopaminergic medication. The UDysRS has four parts:

I. Historical Disability (patient perceptions) of ON-Dyskinesia impact
II. Historical Disability (patient perceptions) of OFF-Dystonia impact
III. Objective Impairment (dyskinesia severity, anatomical distribution over seven body regions, and type (choreic or dystonic) based on four activities observed or video-recorded
IV. Objective disability based on Part III activities

About Unified Parkinson's Disease Rating Scale (MDS-UPDRS)

Unified Parkinson's Disease Rating Scale (MDS-UPDRS) is a standardized and validated estimation scale developed for assessment of symptoms in Parkinson's disease. The instrument has been tested for good reliability and validity and consists of the following four parts:

Part I – Non-Motor Aspects of Experiences of Daily Living
Part II – Motor Aspects of Experiences of Daily Living
Part III – Motor Examination

Part IV – Motor complications of therapy

Each section has questions that rate the symptoms from 0 to 4 where higher values indicate more severe symptoms.

About patient completed 24-hour diaries

Clinical diaries are a standardized method for patients to assess their health status. Patients log their motor status every 30 minutes for 24 hours. Patients record whether their motor status is “OFF”, “ON" or “ON with troublesome dyskinesias”. “OFF” denotes stiffness, marked decrease of mobility or immobility. “ON” denotes good or practically normal mobility, “ON with troublesome dyskinesias” is when the patient is troubled by involuntary twisting and turning movements. Additionally, sleep time is recorded. In this study patients completed two 24-hour diaries before randomization and two 24-hour diaries during the last week of the four-week treatment period.

More information:

Nicholas Waters, VD
Tel: +46 730 75 77 01
E-mail: nicholas.waters@irlab.se

Joakim Tedroff, CMO
Tel: +46 70 760 16 91
E-mail: joakim.tedroff@irlab.se

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About IRLAB

IRLAB is a Swedish biotech company focused on Parkinson's disease. The company's clinical Phase 2 candidates, IRL752 and IRL790, intend to treat some of the most difficult symptoms related to Parkinson's disease: involuntary movements (LIDs), psychosis and symptoms associated with dementia. Through the proprietary ISP (Integrative Screening Process) research platform, IRLAB discovers and develops drug candidates for diseases associated with the central nervous system (CNS). In addition to the clinical candidates, the ISP platform has also generated several CNS programs that are now in preclinical phase. IRLAB's Certified Adviser on Nasdaq First North is FNCA Sweden AB, info@fnca.se, +46 (0)8-528 00 399. More information on www.irlab.se.