UNITED STATES

SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 6-K

Report of Foreign Private Issuer
Pursuant to Rule 13a-16 or 15d-16
under the Securities Exchange Act of 1934

For the month of: June 2015 (Report No. 2)

Commission file number: 001-35932

ALCOBRA LTD.
(Translation of registrant's name into English)

Amot Investment Building
2 Weizman St. 9th Floor
Tel Aviv 6423902 Israel
(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover of Form 20-F or Form 40-F.

Form 20-F ☒ Form 40-F ☐

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(1):_____

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulations S-T Rule 101(b)(7):_____

Attached hereto and incorporated by reference herein is the Registrant's press release issued on June 24, 2015, announcing results of its phase 2 clinical trial of MDX for Fragile X Syndrome.

The first and the fifth through the ninth paragraphs of the press release attached to this Form 6-K of the Registrant are incorporated by reference into the Registration Statements on Form F-3 (File No. 333-197411) and Form S-8 (File No. 333-194875) of the Company, filed with the Securities and Exchange Commission, to be a part thereof from the date on which this report is submitted, to the extent not superseded by documents or reports subsequently filed or furnished.

Exhibit No.

99.1 Press release issued by Alcobra Ltd. on June 24, 2015, announcing results of its phase 2 clinical trial of MDX for Fragile X Syndrome

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Alcobra Ltd.
(Registrant)

By /s/ Dr. Yaron Daniely
Name: Dr. Yaron Daniely
Chief Executive Officer and President

Date: June 24, 2015

Exhibit 99.1

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Alcobra Announces Results from Phase 2 Clinical Trial of MDX for Fragile X Syndrome

-- Study Did Not Meet Primary Endpoint of Change on the ADHD RS-IV Inattentive Subscale

-- Statistically Significant Improvements Seen on Two Secondary Endpoints: the Vineland Adaptive Behavior Scale Daily Living Skills (p=0.044) and the Test of Attentional Performance for Children - Distractibility (p=0.017)

-- Conference Call and Webcast with Alcobra Management and Clinical Trial Principal Investigator Dr. Elizabeth Berry-Kravis Will Be Held Today at 8:00 a.m. ET

Tel Aviv, Israel – June 24, 2015 – Alcobra Ltd. (NasdaqGM: ADHD), an emerging pharmaceutical company focused on the development of new medications to help patients with cognitive disorders, including Attention Deficit Hyperactivity Disorder (ADHD) and Fragile X Syndrome (FXS), today reported that the company's Phase 2 clinical trial of MDX (Metadoxine Extended Release) for the treatment of FXS did not meet the primary endpoint of change from baseline to week 6 of the inattentive subscale of the Attention Deficit Hyperactivity Disorder Rating Scale (ADHD RS-IV). The difference between treatment groups was not statistically significant. However, MDX did achieve statistical significance, in the Intent-to-Treat (ITT) population, on two secondary endpoints, including the Vineland Adaptive Behavior Scale (VABS) Daily Living Skills Domain (p=0.044), and the computerized cognitive Test of Attentional Performance for Children (KiTAP) Distractibility subscale (p=0.017). In the study, MDX was generally well tolerated and no safety concerns were identified.

"The combination of significant improvements in adaptive behavior and cognition, obtained both by caregiver interview, and direct objective patient assessment, suggests a meaningful finding," commented Elizabeth Berry Kravis, MD, PhD, Professor of Pediatrics, Neurological Sciences, and Biochemistry at Rush University Medical Center, and the Principal Investigator of the study. "Previous placebo-controlled trials in adolescent and adult patients with Fragile X have failed to demonstrate such an effect even after a longer treatment duration."

There are no approved medications to treat FXS. MDX has received an Orphan Drug designation from the U.S. Food and Drug Administration (FDA) for the treatment of FXS. Alcobra plans to discuss these trial results with the FDA before finalizing the design of the next study of MDX in FXS.

"We are encouraged by the positive findings on two clinically relevant secondary measures, most notably daily functional behavior such as managing time and money, and completing domestic chores, as well as the further evidence of the pro-cognitive activity of MDX" stated Dr. Yaron Daniely, President and Chief Executive Officer of Alcobra. "FXS is a difficult disease to treat and study, as demonstrated by the lack of approved treatments. Our findings suggest a clinically meaningful advance for patients and caregivers affected by FXS and we plan to meet with the FDA to determine next steps in advancing our research," added Dr. Daniely.

The purpose of the randomized, double-blind, placebo-controlled, multi-center Phase 2 clinical trial (ClinicalTrials.gov Identifier: NCT02126995) was to assess the efficacy and safety of MDX compared to placebo in 62 adolescent and adult patients with FXS, a rare neurogenetic condition and the leading known genetic cause of autism. Efficacy measures included both behavioral and cognitive scales.

Demographics

The baseline demographics of the study demonstrated a mean age of 24 years, with approximately 75% males, mostly Caucasian. The average IQ score was 57 for subjects taking MDX and 52 for subjects taking placebo, with a wide overall range of 18 to 107. Autism spectrum disorder, as classified by the Autism Diagnostic Observation Schedule (ADOS), was present in over 80% of subjects. A total of 40 subjects were concurrently treated with at least one psychotropic drug. 16 of these subjects were concurrently treated with an approved ADHD drug. In general, treatment groups had similar demographics, although significantly more placebo-treated subjects took concomitant ADHD medications during the study (p=0.03).

Primary Endpoint

The objective of the primary endpoint was to show a reduction in the symptom score on the ADHD RS-IV Inattentive subscale. The difference between the MDX-treated group and placebo was not statistically significant (p=0.21), favoring placebo. Related secondary endpoints such as the total ADHD RS score and CGI were similarly non-significant. The detection of a signal on this scale may have been obscured in this exploratory trial by the concomitant use of approved ADHD and other psychotropic medications by a majority of patients during the study and the imbalanced randomization of these patients, the limitations of the ADHD-RS assessment in a population with highly variable and mostly abnormal intellectual capacity and developmental age, and the potential challenge in discerning changes in inattentive symptoms in this complex neurobehavioral disorder.

Secondary Endpoints

Five measures, including two domains of the Vineland Adaptive Behavior Scale (VABS), the Aberrant Behavior Checklist (ABC), the Test of Attentional Performance for Children (KiTAP), and the Repeatable Battery for the Assessment of Neuropsychological Status List Learning test (RBANS-LL) were used as secondary measures in this trial. MDX showed a statistically significant benefit over placebo, in the ITT population, on the VABS Daily Living Skills Domain (p=0.044) and on the computerized KiTAP Distractibility test (p=0.017). The VABS Daily Living Skills assessment is a validated measure of adaptive behavior often used in FXS studies; it includes three subdomains which are assessed through a clinical interview with a caregiver: the personal subdomain; assessing basic functional skills such as eating, drinking, dressing or undressing, and maintaining personal hygiene, the domestic subdomain; assessing primarily household chores the individual can perform such as cooking, cleaning, putting things in place, and keeping themself safe at home, and the community subdomain; assessing the subjects understanding and proper management of time, money, phone use, TV or computer use, travel, work skills and outdoor functions. The KiTAP Distractibility test is a computerized continuous performance test of attention assessing the ability to maintain attention in the presence of distractors. Findings on both the VABS Daily Living Skills Domain and the KiTAP Distractibility test also showed meaningful clinical effect sizes of 0.56 and 0.63 respectively (Cohen's d; standardized difference between two means). The remaining secondary measures did not yield significant findings in the ITT population, although a directional benefit with an effect size of 0.34 was noted on the RBANS-LL, a short-term verbal memory task. A detailed analysis of the study's efficacy measures will be presented during the conference call and webcast hosted by management later this morning.

Safety
During the trial, MDX was generally well tolerated and no safety concerns were identified. The profile of adverse events in the MDX-treated group was similar to the placebo comparator group. The most common side effects were upper respiratory tract infection (6.7% in MDX, 15.6% in placebo), irritability (10.0% in MDX, 9.4% in placebo), and headache (10.0% in MDX, 3.1% in placebo). A single Serious Adverse Event of Bell's Palsy was recorded in the trial, and occurred in a placebo-treated patient.

Conference Call and Webcast
Alcobra management will host an investment community conference call today at 8:00 a.m. Eastern time, featuring the clinical trial coordinating principal investigator, Dr. Elizabeth Berry-Kravis, a recognized expert in FXS. Shareholders and other interested parties may participate in the call by dialing 855-469-0611 (domestic) or +1-484-756-4341 (international) and referencing conference ID number 65964631. The call will be webcast live and archived at http://www.alcobra-pharma.com/indexInvestor.cfm

About Fragile X Syndrome (FXS)
Fragile X Syndrome (FXS) is a genetic condition that causes intellectual disability, behavioral and learning challenges. Behavioral characteristics can include ADHD, autism and autistic behaviors, social anxiety, stereotypic movements, poor eye contact, sensory disorders and increased risk for aggression. FXS is the leading known genetic cause of autism, accounting for about 2-6% of cases. FXS represents an unmet medical need and a rare disease, as defined by the Orphan Drug Act. According to the National Institutes of Health (NIH), approximately one in 4,000 males and one in 8,000 females have FXS. Approximately 50,000 Americans are affected by FXS. The FDA has not approved any drugs specifically for the treatment of FXS or its symptoms.

About MDX
MDX (Metadoxine Extended Release (MG01CI)) is a proprietary investigational new drug candidate being developed by Alcobra for the potential treatment of ADHD and Fragile X Syndrome. MDX is not a stimulant and acts as a monoamine-independent modulator of GABA (gamma-aminobutyric acid) transmission. This novel mechanism of action does not directly affect dopamine or norepinephrine. In studies to date, metadoxine has shown no potential for abuse or addiction. MDX is currently in Phase 3 development for adults with ADHD and Phase 2 development for pediatric ADHD. A Phase 2 study of MDX in adolescents and adults with FXS was completed and results were reported in Q2 2015.

About Alcobra
Alcobra Ltd. is an emerging pharmaceutical company primarily focused on the development and commercialization of a proprietary drug candidate, MDX, to treat cognitive disorders including ADHD and Fragile X Syndrome. For more information please visit the Company's website, www.alcobra-pharma.com, the content of which is not incorporated herein by reference.

Forward-looking Statements

This press release contains forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 and other Federal securities laws. Because such statements deal with future events and are based on Alcobra's current expectations, they are subject to various risks and uncertainties and actual results, performance or achievements of Alcobra could differ materially from those described in or implied by the statements in this press release. For example, forward-looking statements include statements regarding the timing, design, completion and reporting results of clinical studies, and Alcobra's plans to incorporate results from its clinical studies into discussions with regulatory agencies in the United States and Europe to determine next steps for MDX in FXS. In addition, historic results of scientific research do not guarantee that the conclusions of future research would not suggest different conclusions or that historic results referred to in this press release would not be interpreted differently in light of additional research or otherwise. The forward-looking statements contained or implied in this press release are subject to other risks and uncertainties, including those discussed under the heading "Risk Factors" in Alcobra Ltd.'s Annual Report on Form 20-F for the fiscal year ended December 31, 2014, filed with the Securities and Exchange Commission (SEC) and in subsequent filings with the SEC. Except as otherwise required by law, Alcobra disclaims any intention or obligation to update or revise any forward-looking statements, which speak only as of the date hereof, whether as a result of new information, future events or circumstances or otherwise.