Publication of OvaScience's AUGMENT Fertility Treatment Shows Statistically Significant Improvements in Embryo Selection and Transfer Compared to Standard IVF

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Real-World Experience from International IVF Clinics Reported in Peer-Reviewed Journal

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Aug. 26, 2015-- OvaScience[SM] (NASDAQ:OVAS), a global fertility company focused on the discovery, development and commercialization of new treatment options, announced today the first published analysis of real-world patient experience comparing the AUGMENT[SM] fertility treatment to standard *in vitro* fertilization (IVF). In the same woman within the same IVF cycle, AUGMENT-treated eggs had statistically significant higher rates of embryo selection and transfer based on standard embryo quality measures, which resulted in statistically significant higher rates of pregnancy, compared to standard IVF.

The report, published today in the peer-reviewed, *Journal of Fertilization: In Vitro– IVF-Worldwide Reproductive Medicine, Genetic & Stem Cell Biology*, includes a previously described subset of 25 patients at Fakih IVF in the United Arab Emirates (UAE) whose eggs were prospectively allocated to two treatment groups – one that received the AUGMENT treatment and the other that received standard IVF only. The publication also includes the combined experience of more than 90 patients from Fakih IVF and TCART Fertility Partners in Canada that showed substantial improvements in pregnancy rates with the AUGMENT treatment compared to the patients' prior IVF histories. The publication is available at http://www.ovascience.com/technology/publications. A presentation describing the findings is available on the Investors page at www.ovascience.com. The AUGMENT treatment is designed to improve egg health and is not available in the United States.

"This first publication of AUGMENT experience from different IVF clinics shows that AUGMENT treatment resulted in higher ongoing clinical pregnancy rates and healthy births when compared to standard IVF," said Robert F. Casper, M.D., F.R.C.S.(C), Medical Director of TCART Fertility Partners. "In addition, the new analysis by Fakih IVF demonstrated statistically significant higher rates of embryo selection and transfer with the AUGMENT treatment. This provides further evidence that the AUGMENT treatment has the potential to improve egg health and embryo quality, and may offer a new treatment option to improve IVF success."

The eggs retrieved from a group of 25 patients at Fakih IVF were prospectively allocated into two treatment groups: one group received the AUGMENT treatment and the other group received standard IVF with ICSI (intracytoplasmic sperm injection). All 25 patients met the inclusion criteria for the retrospective analysis that required embryo transfer be limited to only one treatment group, as including embryos from both treatment groups would prevent an accurate assessment of treatment benefit. Embryos that were transferred were selected from the one treatment group that had the highest quality embryo(s) for transfer. Accordingly, in patients where more than one embryo was transferred, embryos were only selected from the one treatment group that included overall highest quality embryos. Embryos were selected based on standard morphogenetic analysis, which is composed of two measures. The first is an objective analysis to identify genetic disorders (e.g., cystic fibrosis) and chromosomal abnormalities (e.g., aneuploidy). This is called preimplantation genetic diagnosis (PGD) or preimplantation genetic screening (PGS). The second is an analysis of morphology performed by the embryologist. There is a standard grading system used to evaluate the embryos.

Following the PGD/PGS assessment, there were 9 patients for whom no embryos met the criteria for transfer. The majority of embryos were chosen based on PGD/PGS, an objective measure of embryo quality. The remaining embryos underwent morphological assessment. The morphogenetic analysis resulted in 14 embryo transfers from the AUGMENT group and 2 from the IVF-only group, which was statistically significant and suggestive of improved embryo quality with the AUGMENT treatment.

Ongoing clinical pregnancy rates in these women, who previously had a 0 percent live birth rate, were higher in the AUGMENT treatment group, with 8 women out of 14 with embryo transfers resulting in ongoing clinical pregnancies that are expected to result in live births (and include the births of two sets of twins). There were 0 women with ongoing clinical pregnancies out of 2 with embryo transfers in the IVF-only group. In the intent-to-treat (ITT) analysis of all 25 patients, there was a statistically significant improvement in pregnancy rates with the AUGMENT treatment compared to the IVF-only group. (See Figure 1, pg. 5 of publication)

"Evaluating the AUGMENT treatment in the same woman during the same IVF cycle eliminates many variables and provides clinically meaningful insight into the positive impact the treatment can have for patients," said Michael Fakih, M.D., Co-Founder and Medical Director of Fakih IVF. "As IVF success typically decreases with increasing cycle number and increasing maternal age, we were pleased to see with the AUGMENT treatment that ongoing clinical pregnancy rates per embryo transfer were similar to the success rates of young, donor eggs. This was particularly encouraging given

that these results were observed in patients who had poor embryo quality and prior IVF failures."

The publication also included a summary of patients treated at TCART (n=34) and Fakih IVF (n=59), demonstrating improvements in pregnancy rates above the patients' historic IVF success rates. Prior to the AUGMENT treatment, patients collectively underwent 328 IVF cycles, and had a 2 and 1.4 percent live birth rate per IVF cycle initiated in Canada and the UAE, respectively. After the AUGMENT treatment, there was an 11- and 18-fold increase in ongoing clinical pregnancy rate per initiated cycle in the UAE and Canada, respectively, which includes the births of six babies. Patient experience in the publication is inclusive of all patients up to a certain point in time.

	Patient History	Live Birth Rate per Initiated Cycle	Clinical Pregnancy Rate per Initiated AUGMENT Cycle	Ongoing Clinical Pregnancy Rate/Live Birth Rate per Initiated AUGMENT Cycle
Canada (n=34)	• Average age: 36.0 • 1-5 prior IVF cycles • 71 total prior IVF cycles	1%	35% 9 patients with 23 frozen embryos remaining for transfer	26%
United Arab Emirates (n=59)	• Average age: 37.3 • 1-16 prior IVF cycles • 257 total prior IVF cycles	2%	22%	18%

Canada and UAE Have Reported Six Babies Born with the AUGMENT Treatment

"As with the introduction of other new fertility technologies, we anticipated that IVF clinics would gain experience using the AUGMENT treatment by taking various approaches to demonstrate benefit," said Michelle Dipp, M.D., Ph.D., Chief Executive Officer of OvaScience. "We are pleased that the approaches used to date have shown marked and significant improvement with the AUGMENT treatment compared to standard IVF. We believe that egg allocation offers a more controlled approach in a real-world setting. We look forward to additional patient experiences and publications that demonstrate the benefits of the AUGMENT treatment."

IVF is the standard treatment for infertility, yet it fails the majority of the time. Poor egg health is a major cause of IVF failure, and data has demonstrated that the decline in egg health is largely due to a reduction in energy production. The AUGMENT treatment is designed to improve egg health by supplementing the energy in mature eggs during IVF.

About OvaScience

OvaScience (NASDAQ: OVAS) is a global fertility company dedicated to improving treatment options for women around the world. OvaScience is discovering, developing and commercializing new fertility treatments because we believe women deserve more options. Each OvaScience treatment is based on the Company's proprietary technology platform that leverages the breakthrough discovery of egg precursor (EggPC ^{SM}) cells – immature egg cells found inside the protective ovarian lining. The AUGMENT^{SM} treatment, a fertility option specifically designed to improve egg health, is available in certain IVF clinics in select international regions outside of the United States. OvaScience is developing the OvaPrime^{SM} treatment, which could increase a woman's egg reserve, and the OvaTure ^{SM} treatment, a potential next-generation IVF treatment that could help a woman produce healthy, young, fertilizable eggs without hormone injections. For more information, please visit www.ovascience.com and www.augmenttreatment.com and connect with us on Twitter and Facebook.

Forward-Looking Statements

This press release includes forward-looking statements about the Company's plans for the AUGMENT treatment and its two fertility treatments in development. Actual results may differ materially from those indicated by these forward-looking statements as a result of various important factors, including risks related to: the possibility that international IVF clinics that we work with may determine not to begin or continue providing the AUGMENT treatment for commercial or other reasons; our expectation that the AUGMENT treatment and OvaPrime treatment meet the requirements of a class of products exempt from premarket review and approval under applicable regulations in those countries where we have launched or plan to introduce the AUGMENT treatment and plan to introduce the OvaPrime treatment; the commercial ramp up of the AUGMENT treatment, which we expect will depend upon continued use of the AUGMENT treatment in our partner clinics in new and existing regions, significant uptake in the UAE as a result of the recent coverage, and other programs that include driving first-line use of the AUGMENT treatment, and further results from ACE clinic experience as they become available; the science underlying our treatment and treatments in development (including the AUGMENT, OvaPrime and OvaTure treatments), which is unproven; our ability to obtain regulatory approval where necessary for our potential treatments; our ability to develop our potential treatments, including the OvaPrime and OvaTure treatments, on the timelines we expect, if at all; our ability to commercialize the AUGMENT treatment and our potential treatments, including the OvaPrime treatment, on the timelines we expect, if at all; as well as those risks more fully discussed in the "Risk Factors" section of our most recently filed Quarterly Report on Form 10-Q and/or Annual Report on Form 10-K. The forward-looking statements contained in this press release reflect our current views with respect to future events. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements in the future, we specifically disclaim any obligation to do so. These forward-looking statements should not be relied upon as representing our view as of any date subsequent to the date hereof.

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