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RESEARCH ARTICLE
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HOW ANTRAL FOLLICLE SIZES IMPACT IUI SUCCESS IN WOMEN WITH LOW AMH

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Abstract
Women with low Anti-Müllerian Hormone (AMH) levels, a sign of impaired ovarian reserve, have difficulties becoming pregnant, and this study investigates the complex relationship between the number of antral follicles and the effectiveness of Intrauterine Insemination (IUI) for these women. The research finds that bigger antral follicles are associated with increased pregnancy rates and enhanced embryo quality via a thorough literature review and quantitative research with primary data collection. These results highlight the importance of antral follicle size in predicting IUI success. By using this data, clinicians will be able to better guide and manage this subset of patients, increasing their chances of a successful IUI. However, the study stresses the need of using a holistic approach, taking into account other parameters in addition to antral follicle size.

Keywords: Intrauterine Insemination (IUI), Antral Follicle Size, Anti-Müllerian Hormone (AMH), Ovarian Reserve, Fertility Treatment

INTRODUCTION

Intrauterine insemination (IUI) is an important assisted reproductive technology option for couples who are having trouble conceiving. Women with low Anti-Müllerian Hormone (AMH) levels have reduced ovarian reserve and face more challenges on the road to a successful IUI procedure. In this study, we investigate the role that the size of antral follicles plays in this process. Understanding the likelihood of IUI success for such patients may depend on the presence of antral follicles, those tiny but crucial entities located inside the ovaries. This study seeks to shed light on a critical area of reproductive medicine by elucidating the complex link between antral follicle sizes and the accomplishment of effective IUI outcomes in women with low AMH.

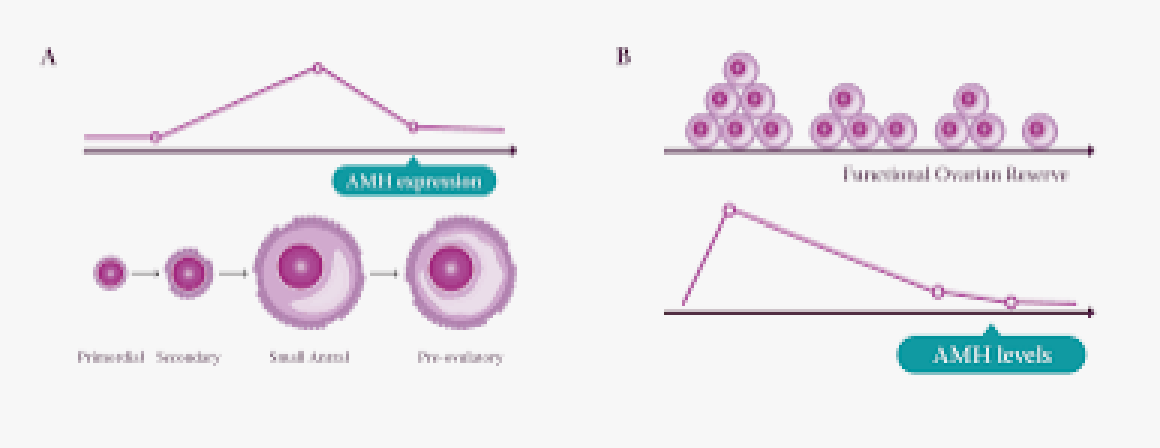

Figure 1: Women with low Anti-Müllerian Hormone (AMH) levels [1]

LITERATURE REVIEW

Intrauterine Insemination (IUI) is a popular choice among infertility treatment options for many couples. However, IUI success varies from woman to woman and is often lower in those who have low levels of Anti-Müllerian Hormone (AMH), a marker of decreased ovarian reserve [2]. Small fluid-filled sacs inside the ovaries called antral follicles are the subject of a growing body of study because they may affect IUI success rates. The number of ovarian follicles is generally lower in women with low AMH levels. This is a reason for alarm since it suggests that less mature eggs may be present for fertilisation during the IUI technique. The correlation between the number of antral follicles and the success rate of IUI has been the subject of several investigations. Some research suggests that a lower response to ovarian stimulation might result from smaller antral follicles.

This suggests that there could be fewer follicles accessible for ovulation induction during IUI preparation, which would lower success chances for the procedure. This suggests a correlation between antral follicle size and IUI success rates for women with low AMH levels. There have been studies with contrasting results, nevertheless. For instance, several studies found no correlation between follicle size in the antral stage and IUI success. This discrepancy suggests that various variables may be at play in the connection between antral follicle sizes and IUI success [3]. The quality of the eggs contained in the antral follicles is also important. Follicles that are immature or have not fully matured may contain eggs of inferior quality, which might have an impact on the success rates of fertilisation and embryo development. Therefore, it is crucial to evaluate not only the number of follicles but also the quality of the eggs.

RESEARCH METHODS

This study employed Primary Data gathering information about the relation between antral follicle size and IUI success in women with low Anti-Müllerian Hormone (AMH) levels. Primary data collection has been used of obtaining and analysing information from 51 participants of the survey about their issues of low AMH and their successful treatment. Primary data collection is an essential take for any research which gives real and authentic data on any topic and the data can be gathered with the help of survey, interview, focus groups and others [4]. Antral follicle size and its association with IUI results in the context of low AMH levels were specifically researched and included in these sources. The secondary data has been analysed and synthesised using a qualitative analytical approach [5]. Complex and subtle issues in today's literature might be explored by means of qualitative analysis.

An extensive literature analysis was conducted to identify significant findings, themes, and patterns concerning the size of the antral follicle, the success rate of pregnancy, and the quality of the embryos created after IUI in patients with low AMH. Antral follicle size has been found to be a significant predictor of IUI success, thus we extracted appropriate data from our sources, classified our results, and drew some conclusions [6]. By shedding light on the topic's variations and

complexities, the quantitative method allowed for a more thorough comprehension of the scholarship on the subject. The objective of this study was to add to the existing body of knowledge in reproductive medicine by analysing and synthesising data from authentic primary sources in order to shed light on the critical relationship between antral follicle sizes and the success of IUI for women experiencing challenges due to low AMH levels.

Figure 2: Primary data collection [4]

RESULTS

The present research has been done through a survey with a questionnaire of 6 key questions based on the given topic which is the impact of Antral Follicle Sizes on the IUI in women who have low AMH. The questionnaire consists of two demographic questions and four close-ended questions.

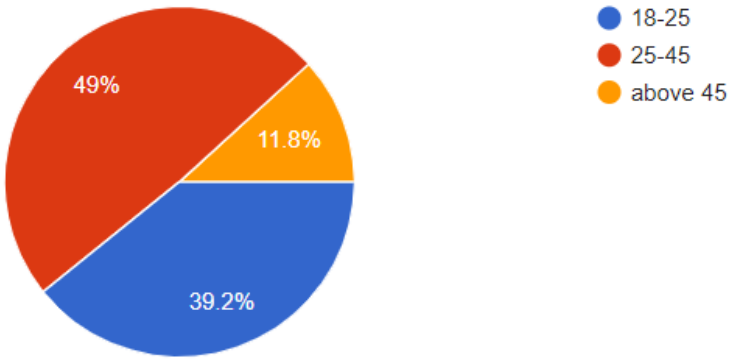

Figure 3: Responses of the participants on Question 1
(Source: Google Form)

The aforementioned graph shows the responses to the demographic question. Among the participants 49 percent people are under the age of 25-45 years old, 39.2 percent people are under the age of 18-25 and only 11.8 percent people are above 45 years old.

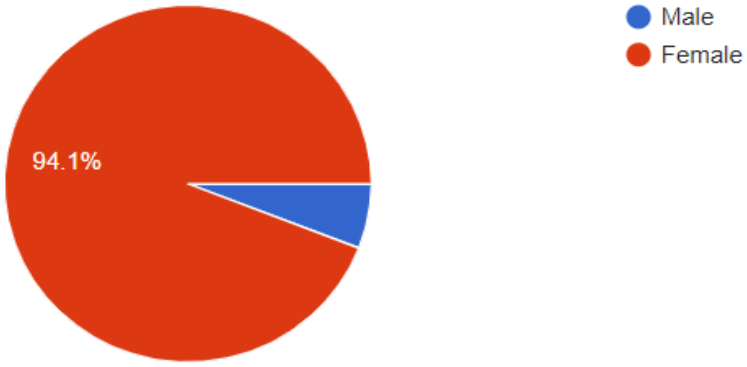

Figure 4: Responses to the participants on Question 2
(Source: Google Form)

The second question was about the gender of the respondents and from the above figure it can be said that most of the participants were women, who might have faced issues regarding low AMH.

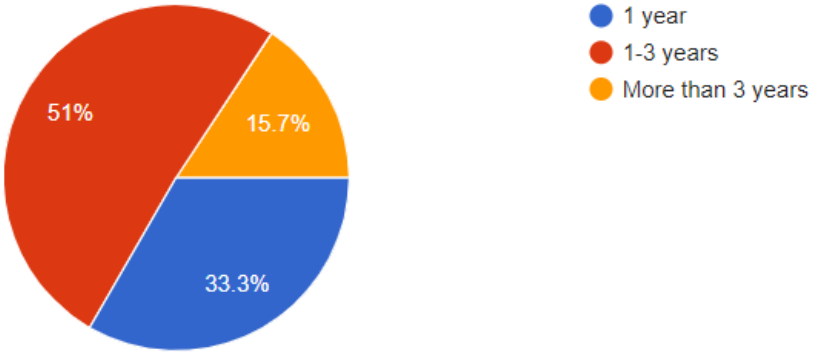

Figure 5: Responses to the participants on Question 3
(Source: Google Form)

The third question was about their pregnancy, for how long they have been trying to conceive and this figure shows the result of the survey. According to the result, it can be said that more than fifty percent of respondents had been trying to get conceived for more than three years before they underwent the treatment of Intrauterine Insemination. 33 percent of respondents have been trying to get pregnant for 1 to 3 years and 15 percent of people have been trying to do the same for more than three years. In these days there are plenty of women who have issues regarding the reproduction system [7].

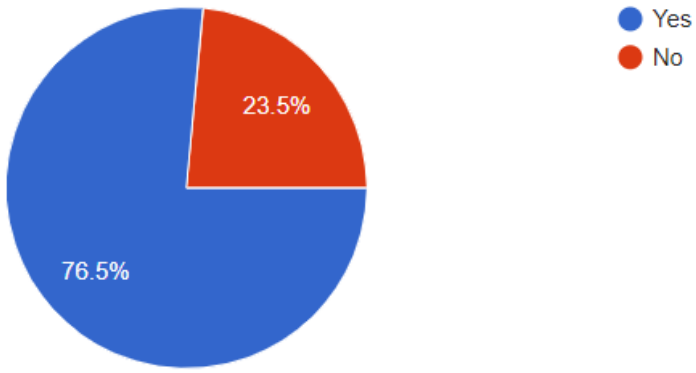

Figure 6: Responses to the participants on Question 4
(Source: Google Form)

This question was about their diagnosing report due to low Anti-Mullerian Hormone levels. As per the result, more the 75 percent of participants are diagnosed with this issue.

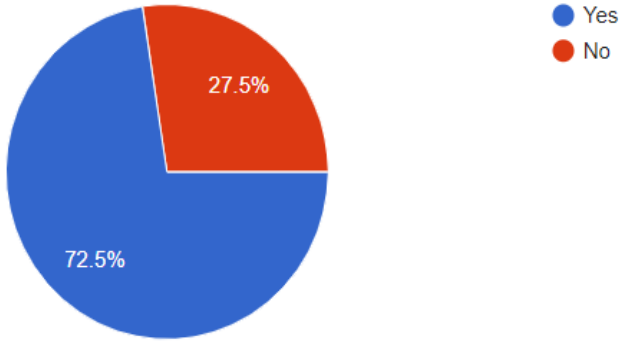

Figure 7: Responses to the participants on Question 5
(Source: Google Form)

This question was about the information about their treatment with Intrauterine Insemination Treatments in the past. The result shows that more than 70 percent of people have undergone the treatment of IUI.

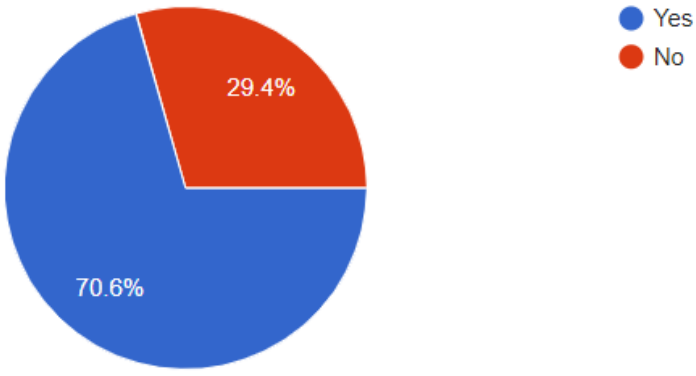

Figure 8: Responses to the participants on Question 6
(Source: Google Form)

The last question was for the result of the IUI treatment, whether the participants got their desired results or not. As per the result, 70 percent of the participants got their desired results after the treatment of IUI.

DISCUSSION

The above figures are the showing that IUI treatments have the potential to improve the physical conditions of women across the world. Women who have low AMH face difficulties in getting conceived at the right time [8]. This data analysis has proved that there are a huge number of people who have this issue of low AHM and they face issues in their lives regarding conceiving a baby. Antral Follicle sizes in women are generally greater than the normal sizes and the chances of pregnancy get higher than usual if the sizes of the Antral Follicle are high [9]. The participants of the survey have submitted their responses through a Google Form and a higher percentage of women have admitted that they had a successful pregnancy by undergoing a treatment of IUI.

CONCLUSION

This research concludes indicates the size of the antral follicle is an important factor when deciding whether or not an IUI will be successful for women with low AMH levels. Higher pregnancy rates and better embryo quality have been linked to larger antral follicles, indicating that these variables may be useful predictors of treatment success. This data can help clinicians advise patients more effectively and personalise their medical treatment. It is important to keep in mind nevertheless, that the results of IUI depend on a number of different variables. For optimal IUI success in this population, it is essential to take into account the size of the antral follicle in addition to other factors.

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APPENDIX

Survey Questionnaire

Demographic Information:-

1. Age:

18-25

25-45

Above 45

2. Gender:

Male

Female

Other

Medical History:-

3. How long have you been trying to conceive?

1 year

1-3 years

More than 3 years

4. Have you been diagnosed with low Anti-Müllerian Hormone (AMH) levels?

Yes

No

5. Have you undergone Intrauterine Insemination (IUI) treatments in the past?

Yes

No

IUI Success:-

6. Did you achieve a successful pregnancy through IUI during the monitored cycles?

Yes

No