Original Article

Acceptability of artificial insemination by donor among infertile women attending the Gynaecological Clinic of the University College Hospital, Ibadan

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ABSTRACT

Background: Artificial insemination by donor (AID) is specifically indicated in cases of incurable male infertility. Acceptability depends on perceptions largely influenced by religious and sociocultural perspectives. Male factor accounts for 20-50% of the causes of infertility and shows geographic variation in Nigeria.

Method: A descriptive cross-sectional survey of all infertile women attending the gynecology clinic of the University College Hospital, Ibadan, between January and June 2014. 181 self-administered questionnaires were distributed to all consenting infertile women, however only 163 were suitable for analysis. Data analysis was descriptive and inferential at 95% confidence interval and a P value of less than 0.05 was considered statistically significant.

Result: The mean duration of infertility was 5.7 ± 4.33 years. Fifty seven (35.0%) respondents were willing to accept artificial insemination by donor, while ninety three (57.1%) were unwilling to accept artificial insemination. Socio-cultural factor (48.1%) was the major reason for non-acceptability of artificial insemination by donor. Acceptability of AID was influenced by adequate knowledge about the procedure ($P < 0.01$). Sixty percent of the respondents had good knowledge and over half of them obtained the information from the news/print media. In this Study, acceptability of AID was not influenced by the age of the respondents, family structure, duration or type of infertility or educational status. ($P > 0.05$).

Conclusion: This study revealed a low acceptance rate for Artificial insemination by donor. Providing information on AID as a treatment option during counseling and routine infertility management may be the needed drive to improve awareness and promote uptake when necessary.

Key words: Acceptability; artificial insemination by donor (AID); male infertility.

Introduction

Couples worldwide are affected by infertility. Although there exist variations between countries and regions, almost 10% of couples experience infertility during their reproductive lives.[1] Globally, 50–80 million people have fertility challenges, and about 2 million new couples are affected annually. One method employed in infertility care is artificial insemination by donor (AID).[1]

AID is a reproductive procedure which involves the insertion of a catheter directly into the uterine cavity at the mid-cycle to deposit spermatozoa obtained from a donor with the goal of achieving pregnancy. AID is used primarily in male

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infertility characterized by nonobstructive azoospermia or other related problems such as necrospermia and immune complex disorders.

Artificial insemination with donor semen is an important treatment for severe male infertility and is often used in single parents and lesbian couples.[2] It involves the scheduled introduction of spermatozoa into the uterus either in a natural cycle or following ovulation induction with gonadotrophins. Correct scheduling of the procedure is paramount to its success as capacitated spermatozoa have limited survival time within the female genital tract.

Male factor accounts for 20%–50% of the causes of infertility and shows geographic variation in Nigeria.[3] The impact of male infertility among Nigerian men has been described as devastating and characterized by emotional and psychological consequences.[4] This has been attributed to the misconception that the only recognizable attribute of manhood is the ability to propagate oneself.[5] The practice of AID in Nigeria is restricted to few specialist centers, and uptake of such services is influenced by sociocultural and religious bias.[6]

AID sperm is an intervention considered generally cheap and cost-effective as compared to *in vitro* fertilization and embryo transfer. Since male factor infertility contributes at least half of the burden of infertility, offering AID to suitable couples would reduce the financial burden experienced in developing countries, like Nigeria, where health insurance coverage is low and cost of care is not affordable.

Spermatozoa for AID may be obtained from a fresh donor or from frozen sperm cells from a sperm bank. Social and medical concerns have arisen from the choice of fresh donor sperm.[7] Indeed, many countries have legislations and established ethical guidelines for the use of donor spermatozoa. This is currently in its infancy in Nigeria, and most fertility centers adopt guidelines from international societies such as the European Society of Human Reproduction and Embryology.

Despite the psychological impact of AID, which includes guilt, anger, loss of self-esteem, and withdrawal,[8] the cost-effectiveness cannot be overemphasized. Evaluating the willingness to accept this reproductive intervention in the treatment of male infertility is critical to its uptake by infertile couples; therefore, the study aims to assess acceptability of AID among infertile women attending the Gynaecological Clinic of the University College Hospital, Ibadan.

Materials and Methods

A descriptive cross-sectional survey of all infertile women attending the Gynaecological Clinic of the University College Hospital, Ibadan, between January and June 2014. One hundred and eighty-one self-administered questionnaires were distributed to all consenting infertile women.

Data collected included sociodemographic variables, such as age, religion, family structure, occupation, and educational level. Other information obtained included the type of infertility, duration of infertility alongside the awareness and perceptions about AID and the acceptability of the procedure if required.

Data analysis was done using statistical package for social sciences (IBM SPSS, New York) version 21. Frequency distribution, cross-tabulation, and test of significance with Chi-square were generated. Data analysis was descriptive and inferential at 95% confidence interval, and $P < 0.05$ was considered statistically significant.

Results

One hundred and eighty-one questionnaires were administered; however, only 163 were suitable for analysis, giving a response rate of 90%. Table 1 shows the sociodemographic characteristics of the infertile women who participated in the study. The mean age was 34 ± 5.7 years. The age range of the respondents was between 24 and 50 years, and majority of them (55.8%) were within the range of 30–39 years. Ninety-five respondents were Christians representing a little over half (58.3%) of the study population. Eighty-eight (54.0%) respondents had tertiary education while only 5 (3.1%) had no formal education. The mean duration of infertility was 5.7 ± 4.33 years. Those that had been infertile for more than 9 years were 34 (20.9%) while majority, i.e., 97 (59.5%) had been infertile for < 5 years.

Table 1: Sociodemographic characteristics of respondents

Variable	Frequency (163)	Percentage
Age (years)		
20-29	40	24.5
30-39	91	55.8
>40	32	19.6
Mean	34±5.70	
Religion		
Christianity	95	58.3
Islam	68	41.7
Educational status		
No formal education	5	3.1
Primary	15	9.2
Secondary	55	33.7
Tertiary	88	54.0

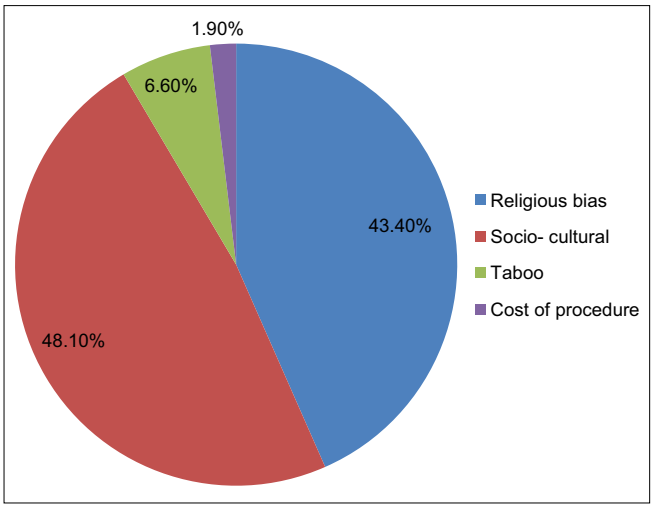

Figure 1: Reasons for nonacceptability of artificial donor insemination

Sixty-four (39.3%) respondents had poor knowledge about AID while 99 (60.7%) had good knowledge about AID.

Table 2 depicts the associations between knowledge of the respondents and selected sociodemographic characteristics. Of the variables shown in the table, only acceptability of AID demonstrated a significant association with knowledge about AID ($P < 0.01$).

Fifty-seven (35.0%) respondents were willing to accept AID, while 93 (57.1%) were unwilling to accept artificial insemination. Thirteen (8.0%) respondents remained undecided.

Figure 1 reveals the reasons for nonacceptability of AID. Majority, i.e., 51 (48.1%) reported that their reason for nonacceptability was sociocultural. Forty-six (43.4%) respondents attributed their decision to religious bias. However, few respondents, i.e., 7 (6.6%) did not accept artificial insemination because they felt it was a taboo. Two (1.9%) respondents were of the opinion that the cost of the procedure was the reason for their unwillingness to accept the procedure.

The association of acceptability of AID and selected sociodemographic variables is shown in Table 3. The table reveals that none of the variables were associated with acceptability of AID ($P > 0.05$). Forty-five respondents had primary infertility, while 54 respondents had secondary infertility. There were no significant relationships between knowledge, acceptability, and infertility suggesting that the type of infertility did not influence the uptake of AID.

Discussion

AID is an important treatment option for infertile couples with male factor infertility, especially in resource-poor countries. This may likely remain so until a less expensive alternative to intracytoplasmic sperm injection (ICSI) is developed. Currently, at the University College Hospital Ibadan, only basic fertility treatments are offered, and efforts are currently in place to establish an advanced fertility unit with facilities for ICSI.

The mean age and duration of infertility in this study were 34 ± 5.7 and 5.7 ± 4.33 years, respectively. Late presentation as observed cut across both religious and educational divides and may be associated with individual perceptions and concerns

Table 2: Knowledge about artificial insemination and selected variables

Variable	Knowledge		χ^2	*P*
	Poor (%)	Good (%)		
Age (years)				
≤34	36 (38.7)	57 (61.3)	0.03	0.87
>34	28 (40.0)	42 (60.0)		
Religion				
Christianity	36 (37.9)	59 (62.1)	0.18	0.67
Islam	28 (41.2)	40 (58.8)		
Family structure				
Monogamy	52 (38.2)	84 (61.8)	0.36	0.55
Polygamy	12 (44.4)	15 (55.6)		
Duration of infertility (years)				
<5	30 (34.9)	56 (65.1)	1.47	0.23
>5	34 (44.2)	43 (55.8)		
Educational status				
Secondary and below	32 (42.7)	43 (57.3)	0.68	0.41
Above secondary	32 (36.4)	56 (63.6)		
Acceptability				
Yes	10 (17.5)	47 (82.5)	17.31	<0.01
No	54 (50.9)	52 (49.1)		

Table 3: Acceptability of artificial insemination and selected variables

Variable	Acceptability of artificial insemination		χ^2	*P*
	Yes (%)	No (%)		
Age (years)				
≤34	31 (33.3)	62 (66.7)	0.26	0.61
>34	26 (37.1)	44 (62.9)		
Religion				
Christianity	34 (35.8)	61 (64.2)	0.07	0.80
Islam	23 (33.8)	45 (66.2)		
Family structure				
Monogamy	44 (32.4)	92 (67.6)	2.47	0.12
Polygamy	13 (48.1)	14 (51.9)		
Duration of Infertility (years)				
<5	26 (30.2)	60 (69.8)	1.80	0.18
≥5	31 (40.3)	46 (59.7)		
Educational status				
Secondary and below	30 (40.0)	45 (60.0)	1.55	0.21
Above secondary	27 (30.7)	61 (69.3)		

about modern treatment of infertility. Late presentation further affects the quality of gametes and outcome of pregnancy.

Findings from the current study revealed that two-third of the respondents had good knowledge about the procedure. Interestingly, only about one-third (35%) were willing to accept artificial donor insemination. Various studies have alluded to the apathy shown toward donor gametes.[8,9] Hwang *et al*. reported high acceptance of AID among infertile male patients.[7] This can be attributable to the fact that infertile male patients are more prone to developing psychological distress and low self-esteem than female patients with infertility.[10] A similar study done in Southeastern Nigeria also revealed a higher acceptability of 43% for AID[5] among couples.

About 60% of the respondents had good knowledge about AID and over half of them obtained the information from the news/print media. Hospital sources of information on AID were almost negligible. This underscores the need to include donor insemination as part of the routine treatment options for infertility during counseling sessions at the gynaecology clinic.

Sociocultural factor was the major reason for nonacceptability of AID. This was closely followed by religious bias. The influence of religion and culture on the health-seeking behavior of infertile couples cannot be ignored, and this study further emphasizes the role played by them. These factors have been reported in previous studies.[5,11] Lack of confidentiality and possible stigmatization has trailed the use of donor semen.[10,12]

Acceptability of AID was influenced by adequate knowledge about the procedure. The better informed the respondents were, the more likely they were to accept AID. Hence, there is an urgent need for public enlightenment and awareness about the use of donor insemination in the management of male infertility. Involving leaders of opinion and health-care providers in this pursuit may actually erase the misconceptions attributable to sociocultural perspectives. Availability of donor semen has been shown to influence the uptake of AID. In a Canadian survey on the feasibility of altruistic semen donation, it was concluded that increased enlightenment was imperative in ensuring optimal supply of donor semen for the populace.[13]

An emerging ethical issues related to semen donation is the right to disclosure. There is an increasing tendency to disclose the identity of donors to the resulting offspring. A Swedish study on disclosure behavior and intention suggested that majority of the participants were willing to disclose the donor identity to their offspring. Seventy-eight percent (78%) of the study population were planning to tell their offspring about the donation.[14]

In this study, acceptability of donor insemination was not influenced by the age of the respondents, family structure, duration or type of infertility or educational status. Contrary to this finding, Ugwu *et al*. in Southeastern Nigeria found a relationship between duration of infertility and acceptability of AID.[5] From their study, women who had infertility beyond 5 years were likely to accept donor insemination. This was attributed to the high premium placed on child bearing and rights to inheritance; a very common practice in eastern Nigeria, where the study was conducted.

Conclusion

This study revealed low acceptance of AID among infertile female patients. It is thus expedient that appropriate counseling and information on AID should be given to infertile patients and possibly include donor insemination as part of routine treatment options for infertility during counseling sessions at the gynecology clinic.

The limitation of the study includes the nonprobability method of selecting respondents; as such selection bias cannot be excluded. It was a hospital-based survey of infertile women, thus limiting generalization to the entire population.

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Conflicts of interest

There are no conflicts of interest.

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