

# Assessing usage of contraceptive methods among Egyptian cardiac women

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**Abstract:** the risk of pregnancy for women with heart diseases ranges widely. For some women, their risk is no different from that of the general population while for others it carries a great risk of death for the woman and/or the offspring. For these women, birth control is more than just a method to appropriately space births; it may prevent a life-threatening pregnancy. Aim: to evaluate the usage of contraceptive methods among Egyptian cardiac patients. Design: a descriptive exploratory research design was utilized. Sample: a convenient sample of 30 pregnant cardiac patients in high risk pregnancy unit at Cairo university maternity hospital was recruited and interviewed using maternal interviewing questionnaire. Results: results revealed that 86.6% of women had RHD, 66.7% underwent cardiac surgeries; mostly valvular replacement, 66.7% of them on anticoagulants. Pregnancy was not recommended by cardiologist in 43.3% of women and not planned in 70% of them. As regards use of contraception; Copper IUD used by 60% followed by progestin only contraceptive pills (mini-pill) 23.3%; the women didn't receive any counseling for the prescribed method and didn't followed up or monitored for the problems associated with its use. Complications associated the contraception use included; vaginal bleeding (36.7%), pregnancy (30%), over weight (16.7%) and vaginal infection (10%). Conclusion: The lack of effective family planning counselling lead to increased incidence of complications and unplanned pregnancies. Recommendations: Detailed assessment, collaboration between interdisciplinary team of cardiology and obstetrics, training of nurses on appropriate methods for different medical disorders including heart disease and including the contraception teaching in postpartum care are all recommended for proper selection of contraceptive method and prevent undesirable complications.

**Keywords:** Usage, Contraceptive, Methods, Cardiac, Women.

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## 1. INTRODUCTION

Number of women suffering from cardiac diseases reaching childbearing age and get married are increasing as a result of advances in treatment and cardiac surgery (1). Cardiovascular diseases is considered as the most common indirect cause (16%) for maternal mortality in Egypt (2). According to recent three-years observational study, the heart disease complicates approximately 2.5% of pregnancies; Rheumatic heart disease (RHD) is the most common disorder while congenital heart disease CHD and cardiac disease with comorbidities constituted fifth of cases (3).

Women with heart disease especially those who enter pregnancy without enough preparation and planning can have an increased risk of health problems and complications during pregnancy including abortions, fetal congenital anomalies, preterm labor, thromboembolic complications, deteriorated cardiac condition and maternal death (4).

The effective use of contraceptive methods is crucial to eliminate unwanted pregnancies in those who are not recommended to get pregnancy and to avoid complication related to use of inappropriate method also; to ensure enough time of counseling and planning for pregnancy to avoid teratogenic effect of medications and maintain stable status favorable to conception (5).

Moreover; the contraceptive advice has to be individualized and should be based not only on the nature of the cardiac problem, but also on the presence of other medical conditions, the age of the woman, number of previous children, cultural and religious beliefs, and individual preferences (5).

The extremely low rate of the use of contraception in women affected with cardiac disease reflects the poor provision of family planning and pre-pregnancy advice (6). Previous studies has underlined the deficient contraception services for cardiac patients; many of these women receive either no advice or inappropriate advice about contraception. Suitable effective reversible methods are often denied by health professionals who are concerned more about the safety of hormonal contraceptives in women with cardiac disease (7). Another study reported the extensive use of estrogen-containing products, despite their association with an increased risk of thrombo-embolic disease, while the safer progesterone-only alternatives were used relatively infrequently (8)

Usage of contraceptive methods among Egyptian women suffering from heart disease is not studied before. Maternity nurse usually meets the cardiac patient while she is pregnant in high risk pregnancy units and practically no contraceptive advice is given. Knowing factors affecting selection of birth control method and problems associated with contraception among cardiac patients is crucial to avoid unplanned or not recommended pregnancies and to avoid adverse effect of inappropriate method. Both maternity nurses and nurses working in cardiac clinics should have their part in administering effective contraception advice to those who are in need for appropriate counseling. The aim of current study is to evaluate the usage of contraceptive methods among Egyptian cardiac patients

## 2. SUBJECT & METHOD

### Design

Descriptive exploratory research design was utilized for the current study. This type of research design describes phenomena about which little is normally known through data collected, patterns or trends may emerge and possible links between variables (9). Moreover, it aims to generate new facts, implies natural observation of the characteristics of the research subjects without deliberate manipulation of the variables or control over the research sitting (10).

### Sample

A convenient sample of 30 pregnant women who admitted to high risk pregnancy unit at Cairo university maternity hospital were recruited to answer the question of the current study.

### Setting

The data of current study was collected in the high risk pregnancy unit at Cairo university maternity hospital. It is a university affiliated hospital providing free health care to maternity as well as gynecological clients, the high risk pregnancy unit capacity is around 40 beds, receiving pregnant women with different medical and pregnancy related disorders. Being a large university hospital in a metropolitan city; it attract clients from all over Egypt including upper and Lower Egypt areas but principally from Giza and all nearby areas.

### Ethical consideration

Written approval to participate in the study was obtained from woman after explanation of the purpose of the study. All subjects were informed that participation in the study is voluntary, no names were included in the questionnaire sheets and anonymity and confidentiality of each participant was protected by allocation of a code number for each response and subjects were informed that the content of the tools will be used for the research purposes only.

### Tools

Maternal interviewing questionnaire was utilized to assess usage of contraceptive methods among cardiac patients; it was developed by the researcher after comprehensive reviewing of the available literature related to the studied topic. The tool included questions related to socio-demographic characteristics and history of cardiac disease such as age, residence, education, type of cardiac disease, duration of disease, if cardiac surgery had been done, rhythm of follow up and prescribed medication. Moreover; tool asked about data related to obstetric history and current pregnancy such as number

of para, gravida, abortion, admission to hospital and complications in the previous pregnancy, the reason of current pregnancy and if it was planned or not, class of cardiac disease before and during pregnancy according to NAYHA classification.

Last part of the tool included data related to history of contraception usage; type, duration of use, reason of discontinuation, complications associated with each one and the person who had counselled the women about its use.

**Procedure**

The researcher introduced herself to the patient and explained the purpose of the study and took her oral acceptance. Each woman has been interviewed to collect data related to socio-demographic characteristics, history of cardiac disease, obstetric history, current pregnancy and data related to history of contraception usage. The interview last for 15 minutes, the questions were asked in simple Arabic language and answers were recorded in the sheet.

**3. RESULTS**

As revealed in table (1); the mean age of women was 31.7±6.02 years. As regards residence; 73.3% of women live in urban while 60% had technical education. As regards heart disease history of studied women; the majority of women had rheumatic heart diseases RHD 86.6%, two thirds of them underwent cardiac surgeries 66.7%; mostly valvular replacement and 73.3% follow up their cardiac regularly with cardiologist. The prescribed medications included anticoagulants 66.7%, digoxin 50% and long acting penicillin LAP 6.7%.

As revealed in table (2), 63.3% of women were pregnant for second or third pregnancy, 30 % had aborted before, 16.7% had preterm delivery, only 3.3% of them had no children and nearly three quarters of them 73.3% admitted to hospital in their previous pregnancies. Hemorrhage was the most common complication in previous pregnancies 20% followed by IUFD, hypertension, deterioration of cardiac disease 6.7% and DVT 3.3%.

As regards current pregnancy; pregnancy was not recommended by cardiologist in 43.3% of women and not planned in 70% of them moreover whereas half of the studied women 50% got pregnancy in less than 1year after last delivery because of stopping the contraceptive method used. Moreover; while most of women were class I or II before pregnancy 96.7%; they transferred to class III during pregnancy 66.7% (table, 3).

As regards use of contraception; Copper IUD was the most common used contraceptive methods 60% followed by progestin only contraceptive pills (mini-pill) 23.3%, three-months IM injection (Depo-Provera) 6.7%, sub-dermal capsule (Norplant) 3.3%, one-month IM injection (combined contraceptive injection) and lactational amenorrhea 3.3% (figure, 1). Obstetrician reported as the prescriber for the method for all studied women; at the same time, women didn't receive any counseling for the prescribed method and didn't followed up or monitored for the problems associated with its use.

Vaginal bleeding was the most recurrent complications associated the contraception use among studied women 36.7% followed by pregnancy 30%, over weight 16.7%, vaginal infection 10%, uterine perforation and hypertension in 3.3% of cases (figure, 2)

**Table (1): Distribution of the study sample according to socio-demographic characteristics and history of heart disease (n=30)**

Items	F	%
<b>Place of residence</b>		
▪ Rural	22	26.7
▪ Urban	8	73.3
<b>Educational level</b>		
▪ Can't read and write	7	23.3
▪ Primary	1	3.3
▪ Technical	18	60
▪ College	4	13.4
<b>Type of heart disease</b>	26	86.6

<ul style="list-style-type: none"> <li>▪ Rheumatic heart disease</li> <li>▪ Congenital heart disease</li> </ul>	4	13.4
<b>Type of cardiac surgery</b>		
<ul style="list-style-type: none"> <li>▪ No surgery</li> <li>▪ Aortic replacement</li> <li>▪ Mitral replacement</li> <li>▪ Aortic and mitral replacement</li> <li>▪ Ventricular septal defect repair</li> </ul>	10 4 9 6 1	33.6 13.4 30 18 3.3
<b>Follow up with cardiologist</b>		
<ul style="list-style-type: none"> <li>▪ Regularly</li> <li>▪ If necessary</li> <li>▪ No follow up</li> </ul>	22 3 5	73.3 10.0 16.7
<b>Prescribed medications</b>		
<ul style="list-style-type: none"> <li>▪ Anticoagulants</li> <li>▪ Digoxin</li> <li>▪ Anticoagulants and digoxin</li> <li>▪ LAP</li> </ul>	13 8 7 2	34.3 26.7 23.3 6.7

**Table (2): Distribution of the study sample according to Obstetric history**

Item	F	%
<b>Number of gravida</b>		
<ul style="list-style-type: none"> <li>▪ Primi gravid</li> <li>▪ 2<sup>nd</sup> gravida</li> <li>▪ 3<sup>rd</sup> gravida</li> <li>▪ 4<sup>th</sup> -7<sup>th</sup> gravida</li> </ul>	- 15 10 5	- 50 33.3 16.7
<b>Number of abortion</b>		
<ul style="list-style-type: none"> <li>▪ No abortion</li> <li>▪ one time</li> <li>▪ twice or more</li> </ul>	21 5 4	70 16.7 13.3
<b>History of preterm labor</b>		
<ul style="list-style-type: none"> <li>▪ Yes</li> <li>▪ No</li> </ul>	5 25	16.7 83.3
<b>Number of living children</b>		
<ul style="list-style-type: none"> <li>▪ No children</li> <li>▪ One</li> <li>▪ Two or more</li> </ul>	1 12 17	3.3 40 56.7
<b>Admission to hospital in previous Pregnancies</b>		
<ul style="list-style-type: none"> <li>▪ No</li> <li>▪ Yes</li> </ul>	8 22	26.7 73.3
<b>Type of previous pregnancy complications</b>		
<ul style="list-style-type: none"> <li>▪ Postpartum hemorrhage</li> <li>▪ IUFD</li> <li>▪ Deteriorated cardiac condition</li> <li>▪ Hypertension</li> <li>▪ DVT</li> </ul>	6 2 2 2 1	20 6.7 6.7 6.7 3.3

Table (3): Distribution of the study sample according to current pregnancy data

Item	F	%
<b>Risk of pregnancy</b>		
▪ Not risky	10	33.3
▪ Risky	13	43.3
▪ Do not know	7	23.4
<b>Planning of current pregnancy</b>		
▪ Planned	9	30
▪ Not planned	21	70
<b>Discontinuation rate of contraceptive method</b>		
▪ 1 year	23	76.7
▪ -2 years	3	10
▪ More than 2 years	4	13.3
<b>Class of cardiac disease before pregnancy according to NYHA classification</b>		
▪ Class I	10	33.3
▪ Class II	19	63.4
▪ Class III	1	3.3
▪ Class IV	-	-
<b>Class of cardiac disease before pregnancy according to NYHA classification</b>		
▪ Class I	1	3.3
▪ Class II	9	30
▪ Class III	20	66.7
▪ Class IV	-	-

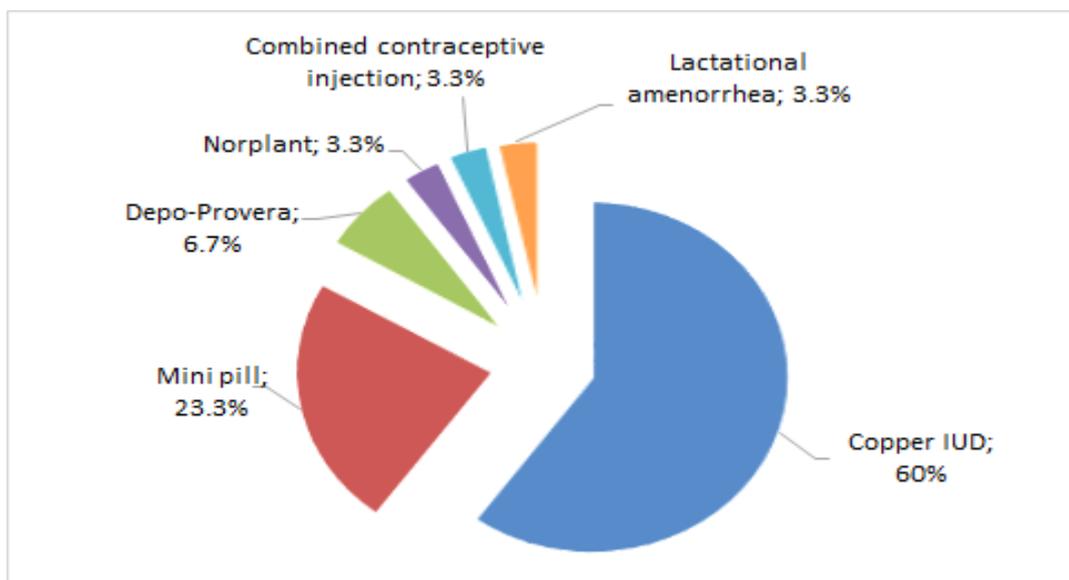


Fig. (1): Contraceptive methods used by cardiac patients (n=30)\*

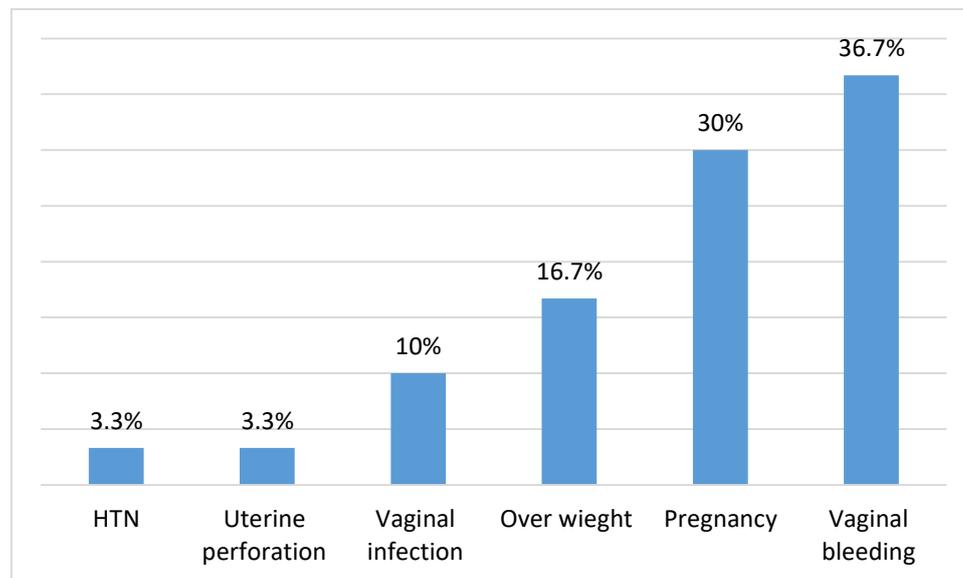


Fig. (2): problems associated with contraceptive methods used by cardiac patients (n=30)\*

#### 4. DISCUSSION

The current study aimed to assess the usage of contraceptive methods among cardiac patients admitted to El-Manial maternity hospital during their pregnancy. Socio-demographic data, medical and obstetric history and history of usage of contraceptive methods were assessed to determine the pattern of birth spacing, complications accompanied previous pregnancies, counseling given for contraception and problems associated.

Most women in current study were diagnosed with rheumatic heart disease and mitral valve was the usually affected valve; this result is consistent with (3, 11) while arrhythmias were the commonest in many studies (11, 12, 13); postpartum hemorrhage accompanied 20% of previous pregnancies in studied women; this might be related to prevalent use of anticoagulation medications as two thirds of women underwent valvular replacement surgery that required life-long anti-thrombotic therapy. The same results reported by van Hagen and associates in their worldwide registry of pregnancy and cardiac disease (ROPAC) (14).

Copper-IUD was the most common used method for contraception among studied women; the result is not the same line with the reported findings of using barrier methods especially condoms (15, 7) and oral contraceptives (15, 8) as a frequently used methods. This result might be related to the wide acceptability of IUD as long, reversible, effective and low-priced method for family planning in Egypt (16) and concern about possibility of pregnancy with use of progestin-only pills.

Putting into consideration that two thirds of women in current study are on anticoagulant therapy and that copper-IUD carries increased risk of infective endocarditis and bleeding (1) and also the fact that bleeding was the most common cause to stop using the method; gives clear inference that no appropriate counseling given to those women and no assessment for the suitability of prescribed method have been done, this result is congruent with findings of rogers and colleagues who reported that 43% of female cardiac patients in their study didn't receive any contraception advice (7).

As regard the discontinuation rate of the contraceptive method; 76.7% of women had discontinued using the method within 12-months and the unplanned pregnancy was the logic consequence (70%). This result was dissimilar with the reported 30% 12-months discontinuation rate in Egypt general population (17). The reason reported by studied women was increased incidence of methods-related complications which might be resulted from use of inappropriate method, absence of appropriate advice on alternative method to protect against accidental pregnancy, ignorance of assessing women's preferences to certain method or ability of compliance on progestin-only pills social pressure for pregnancy or unavailability of the liaison service between obstetricians and cardiologists.

## 5. RECOMMENDATIONS

Detailed assessment, collaboration between interdisciplinary team of cardiology and obstetrics, training of nurses on appropriate methods for different medical disorders including heart disease and including the contraception teaching in postpartum care are all recommended for proper selection of contraceptive method and prevent undesirable complications. Moreover; preconception advice and birth control information should be given early to all female cardiac patients, as correct information will avoid the potential risks of an unplanned pregnancy. Also; encouraging multidisciplinary guidelines and pathways of family planning for cardiac patients to be developed.

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