

Evaluation of Gynecological Problems among Hemodialysis Women

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Abstract:

Background: The ovulatory menstrual cycle is affected on multiple levels in women with advanced renal disease: Menstrual irregularities, sexual dysfunction and infertility.

Aim of the study: this study was designed forevaluation of gynecological problems among hemodialysis women.

Research questions: what are gynecological problems among hemodialysis women? Doesgynecological problems affected by hemodialysis?

Design of the study: a descriptive study.

Type of sample: a purposive sample was used.

Sample size: Total sample size reached 62 patientsfor six months, who maintenance on hemodialysis for at least three months, at average of age from 18-45 years old and able to speak and hear.

Setting: this study was conducted at hemodialysis unit in El-Mahalla general hospital.

Tools of Data Collections: werestructured interviewing questionnaire which include:assessment sheet and menstrual cycle questionnaire.

The Results of the current study revealed thatthere was highly significant difference ($p < 0.000$) among hemodialysis women as regards menstrual disorders; menometorrhagia, intermenstrual bleeding, oligomenorrhea and secondary amenorrhea. More than two fifth of women had abnormal vaginal discharges and near one third of the dialysis women had galactorrhea.

Conclusion: this study concluded that gynecological problems were most common among hemodialysis women such as; menometorrhagia, oligomenorrhea, secondary amenorrhea and galactorrhea.

Recommendations: Continuous monitoring for any menstrual or gynecological abnormalities occurring during hemodialysis and referral for gynecological clinic.

Key Words: Menstrual cycle, Hemodialysis and Menstrual disorders.

I. Introduction

Ending stage of renal disease (ESRD) is a most important health concern worldwide, with a high prevalence and incidence (Guerra et al., 2010). Hemodialysis is part of the management for ESRD that is used most often around the world. The treatment focus mostly on recovering or maintaining quality of life in the greatest possible conditions and includes: liquid limitation, nutritional control, adherence to medication instruction, and attendance at dialysis sessions (Cicolini et al., 2012).

Women with chronic renal disease (CRD) suffer a variety of common gynecological disorders which are frequently unrecognized. Several of these gynecological problems are caused or exacerbated by the renal disease or its treatment. The number of hospital visits was not increased by offering a gynecological examination because the gynecology and renal clinics took place on the same day to aid compliance (World Health Organization, 2014).

Menstrual dilemma is most common among women with renal failure. It is partly because of abnormal bleeding time due to platelet dysfunction and also because of failure to ovulate or maintain adequate corpus luteum function. Amenorrhea is most common by the time the patient reaches end-stage renal disease. The menstrual cycle typically remains irregular with scanty flow after the beginning of maintenance dialysis, although normal menstrual cycle are restored in some women (Özmen et al., 2006) In other hand , menorrhagia occurs and it is direct concern, because heavy bleeding deteriorate the chronic anemia of renal disease and major blood loss if uncontrolled may require blood transfusion. (Pala & Dundar, 2008).

The major factor for these menstrual cycle abnormalities in uremic women is oligomenorrhea because, results from dysfunction hypothalamic-pituitary gonadal . Leptin is one of the responsible factors relating to this cycle abnormality. In general, serum leptin levels are significantly high in patients with renal failure, mostly when compared to age and body mass index matched controls (K adirolu et al., 2006)

Leptin appears to be one of numerous issue that influence the maturation of the gonadotropin-releasing hormone (GnRH) pulse generator. Hyperprolactinemia is general in women with chronic kidney failure due to increased secretion and reduced metabolic clearance of this hormone (Deniz et al., 2011). Increased prolactin

levels may impair hypothalamic-pituitary function and lead to sexual dysfunction and galactorrhea in these patients.

The end-stage of renal disease reduce fertility . Conception is rare for women on dialysis, and occur at a rate of one in every 200 patients. Pregnancy is often detect late because of menstrual irregularities; thus, early spontaneous abortion may be overlooked. The diagnosis of pregnancy is difficult in women with end-stage renal disease; particularly because serum levels of beta-human chorionic gonadotropin (Beta-HCG) may be increase in the absence of pregnancy. The major risks for a fetus include death, prematurity, and growth retardation. (Deniz et al., 2011)

II. Subjects and Methods

The methodology which followed for achieving the study aim elaborated under four main parts; technical design, operational design, administrative procedures and statistical methods .

I. Technical Design

The technical design used for this study entails four main items; the study design, the study setting, subjects of the study and the tools of data collection.

- 1- **Study Design:** Descriptive research design was utilized.
- 2- **Study Setting:** The current study was conducted in hemodialysis unit at El-Mahalla General Hospital
- 3- **Subjects:** The study was conducted on 62 hemodialysis female patients who attending the hemodialysis unit for six months started from July to the end of December 2014. Participant were selected through purposive sampling technique based on the following criteria.

a- Inclusion criteria:

- Actively undergoing in hemodialysis unit.
- On hemodialysis for at least three months.
- At average of age from 18-45 years old.
- Able to speak and hear.

b- Exclusion criteria:

- Diagnosed of dementia, depression or other condition that may impair the ability to answer questions.
- Cognitive or medical changes occurring during the hemodialysis treatment that prevented the person from answering questions.
- Receiving antidepressant drugs, radiation therapy and chemotherapy.

II. Operational Design

The operational design includes preparatory phase, pilot study phase, fieldwork phase, data analysis phase, phase of presentation of result of final form and discussion. The study was implementing through these phases.

A. Preparatory phase:

It included reviewing of related literature, and theoretical knowledge of various aspects of the study using books, articles, internet periodicals and magazines, as well as pioneer from nursing experts in order to develop the exact tools for data collection.

B. Pilot study:

After preparing the tools, a pilot study was carried out on 10 % (18 day) of hemodialysis women undergoing hemodialysis unit at El-Mehalla general hospital. The pilot sample was excluded from the study based on modifications that done.

C. Field work phase:

- The researcher was attended at hemodialysis unit at El-Mahalla General Hospital after taking permission for 3 day/week till the end of six months started from July to December 2014.
- The researcher was attended at 7:00 am till 3:00 pm for four months and attended at 6:00 pm till 8:00 pm for two months.
- The women's were selected from the previous mentioned setting according the previous criteria by purposive sample technique. Firstly the aim of the study was explained to the women and their consents were obtained from each woman.

- An individual interview was conducted by the researcher by using two tools to collect necessary data from hemodialysis unit at El-Mahalla General Hospital, each interview was take 45 minutes to 60 minutes for each patient.

III. Tools of data collections

To achieve the aim of this study, two tools were used for data collection as follow: -
Structured interviewing questionnaire which include:two tools were used in this study for data collection

1. Assessment Sheet: which include two parts

- General characteristics such as name, age, marital status.....etc.
- Patient's Obstetrical History such as number of pregnancies, number of births and complications during childbirth, abortion.....etc.

2. Menstrual Cycle Questionnaire: which include four parts

- Part I : Obstetrical and Gynecological Disease
- Part II: Premenstrual Symptoms
- Part III: Menstrual Cycle Patterns
- Part IV: Menstrual Pain

IV. Limitation of the study

The researches about menstrual cycle in hemodialysis women was limited, old research and no researches about this issue in Egypt .

V. Statistics

The collected data were coded, computed and statistically analyzed using SPSS (statistical package of social sciences) software program version 16. The data of qualitative (categorical) variables were presented as frequency and percentage. The comparison of groups of categorical variables was done using chi square test (χ^2) and fisher exact test (FET) was used if one cell or more has expected value less than 5 in four cells table.

VI. Results

Part 1: Assessment Part

Table (1): Frequency Distribution of General Characteristics among Dialysis Women.

| variables | No (n=62) | % |
|------------------------------|-----------|------|
| Age groups(years) | | |
| < 20 years | 2 | 3.2 |
| 20- <40 years | 39 | 62.9 |
| ≤ 40 years | 21 | 33.9 |
| Social status | | |
| Married | 41 | 66.1 |
| Single | 13 | 21.0 |
| Divorced | 2 | 3.2 |
| Widow | 6 | 9.7 |
| Single due to disease | | |
| Yes | 9 | 69.3 |
| No | 4 | 30.7 |
| Marital relationship | | |
| Yes | 37 | 90.2 |
| No | 4 | 9.8 |
| Having children | | |
| Yes | 36 | 58.1 |
| No | 26 | 44.9 |

Table(1) illustrates that near two third (62.9%) of the patients aged between 20 to 40 years old, more than three fifth of them from urban (61.3%). The married women are more than two third (66.1%), more than three fifth (69.3%) of single women are still single because of renal failure. More than half (58.1%) of dialysis women having children.

Table (2- A): Frequency Distribution of Obstetric and Gynecological History among Dialysis Women.

| Variables | No. (n=62) | % |
|-------------------------------|------------|------|
| Gravidity | | |
| Null gravida | 18 | 29.1 |
| 1-3 | 33 | 53.2 |
| 4+ | 11 | 17.7 |
| Parity | | |
| Nullipara | 24 | 38.7 |
| 1-3 | 35 | 56.5 |
| 4+ | 3 | 4.8 |
| Mode of delivery | | |
| Vaginal delivery | 29 | 76.3 |
| Vacuum extraction | 2 | 5.3 |
| Cesarean Section | 7 | 18.4 |
| Contraceptive use | | |
| Yes | 12 | 19.4 |
| No | 50 | 80.6 |
| Contraceptive type | | |
| pills | 4 | 33.3 |
| Intra Uterine Device | 5 | 41.7 |
| Injection | | |
| -1 month | 2 | 16.7 |
| -3 month | 0 | 0 |
| Tubal ligation | 1 | 8.3 |
| Complications of labor | | |
| Yes | 8 | 21.1 |
| No | 30 | 78.9 |
| Types of complications | | |
| Preeclampsia | 5 | 62.5 |
| Intrapartum hemorrhage | 3 | 37.5 |

Table(2-A) illustrates that more than half (53.2%) of dialysis women have one to three gravida and (56.5%) of dialysis women have one to three para. More than three quarter of dialysis women (76.3%) have normal delivery, less than one fifth (19.4%) of dialysis women only using contraceptive methods, more than two fifth(41.7%) of them using IUD. More than one fifth (21.1%) of dialysis women having complications during labor and nearly two third (62.5%) of this complications due to Preeclampsia.

Table (2- B): Frequency Distribution of Obstetric and Gynecological History among Dialysis Women.

| Variables | No. (n=62) | % |
|----------------------------------------------|------------|------|
| Abortion | | |
| Yes | 19 | 43.2 |
| No | 25 | 56.8 |
| Types of abortion | | |
| Induced | 1 | 5.3 |
| Spontaneous | 18 | 94.7 |
| Relation of abortion to renal failure | | |
| Before | 13 | 68.4 |
| After | 6 | 31.6 |
| Abortion number | | |
| One time | 15 | 78.9 |
| Two times | 4 | 21.1 |
| Causes of abortion | | |
| Hypertension | 5 | 26.3 |
| Toxoplasmosis | 5 | 26.3 |
| Increase urea & creatinine | 2 | 10.5 |
| Carry heavy things | 2 | 10.5 |
| Increase muscular effort | 1 | 5.3 |
| Radiation | 1 | 5.3 |
| Unknown | 3 | 15.8 |
| Vaginal discharge | | |
| Yes | 29 | 46.8 |
| No | 33 | 53.2 |
| Color of Vaginal discharge | | |
| Cheesy white | 16 | 55.2 |
| yellow | 9 | 31.0 |
| Green | 4 | 13.8 |
| Odor of Vaginal discharge | | |
| Odorless | 22 | 75.9 |
| Offensive | 7 | 24.1 |

| | | |
|-----------------------------------|----|------|
| Vaginal bleeding | | |
| yes | 10 | 16.1 |
| No | 52 | 83.9 |
| Causes of vaginal bleeding | | |
| Ovarian cyst | 4 | 40.0 |
| Hypertension | 1 | 10.0 |
| Heparin | 2 | 20.0 |
| Unknown | 3 | 30.0 |
| Galactorrhea | | |
| Yes | 20 | 32.3 |
| No | 42 | 67.7 |

Table (2-B) represents that more than two fifth of dialysis women (43.2%) having abortion, the majority (94.7%) of them have spontaneous abortion and only (5.3%) is induced abortion, more than three quarter (78.9%) of dialysis women have only one time abortion. The most common causes of abortion were hypertension and toxoplasmosis with the same percentage of (26.3%). More than two fifth (46.8%) of women have abnormal vaginal discharges, more than half (55.2%) of these women have vaginal discharge cheesy white in color, more than three quarter (75.9%) of these women have odorless vaginal discharges. Also the table represents that less than one fifth (16.1%) of the studied dialysis women have vaginal bleeding, (40%) of vaginal bleeding because of ovarian cyst, (20%) of it because of heparin giving during dialysis session. Near one third of the dialysis women (32.3%) have galactorrhea.

Part 2: Assessment of Menstrual Cycle

Table (3-A): Frequency Distribution of Gynecological Disease among Dialysis Women.

| Gynecological Disease | Before hemodialysis (n=62) | | After hemodialysis (n=62) | | Significance test |
|-----------------------------|----------------------------|-----|---------------------------|------|-------------------|
| | No. | % | No. | % | |
| Uterine fibroid | 0 | 0.0 | 1 | 1.6 | FET,P 0.500 |
| Ovarian cysts | 1 | 1.6 | 7 | 11.3 | FET,P 0.033* |
| Uterine adhesions | 1 | 1.6 | 1 | 1.6 | --- |
| Fallopian tube adhesions | 1 | 1.6 | 1 | 1.6 | --- |
| Polycystic ovarian syndrome | 1 | 1.6 | 1 | 1.6 | --- |
| Infertility | 4 | 6.4 | 14 | 22.6 | FET,P 0.031* |

* Significant **highly significant

Table (3-A) shows that there was no significant difference of gynecological diseases before and after hemodialysis except ovarian cyst, while it was found that (1.6%) of dialysis women before dialysis became (11.3%) after dialysis with statistical significant difference (P 0.033) and also there is statistical significant difference in infertility while there is only 6.4% before dialysis and 22.6% after dialysis.

Table (3- B): Frequency Distribution of Premenstrual symptoms among Dialysis Women.

| Premenstrual symptoms | Before hemodialysis (n=60) | | After hemodialysis (n=60) | | Significance test |
|------------------------------|----------------------------|-------|---------------------------|------|----------------------------|
| | No | % | No | % | |
| Feel cold | 9 | 15.0 | 46 | 76.6 | $x^2= 44.73, P 0.000^{**}$ |
| Abdominal bloating | 11 | 18.34 | 41 | 68.3 | $x^2=29.81, P 0.000^{**}$ |
| Dull or headaches | 6 | 10.0 | 31 | 51.7 | $x^2=23.58, P 0.000^{**}$ |
| Breast tenderness | 16 | 26.7 | 40 | 66.7 | $x^2=18.76, P 0.000^{**}$ |
| Pale face | 11 | 18.3 | 35 | 58.3 | $x^2=19.91, P 0.000^{**}$ |
| Stool changes before period | 9 | 15.0 | 22 | 36.7 | $x^2= 2.27, P 0.007^*$ |
| Short temper | 25 | 41.7 | 37 | 61.6 | $x^2=4.65, P 0.031^*$ |
| Premenstrual mood changes | 23 | 38.3 | 32 | 53.3 | $x^2=2.65, P 0.104$ |
| Depression | 0 | 0.0 | 1 | 1.7 | FET, P 0.500 |
| Migraines or tension | 1 | 1.7 | 4 | 6.7 | FET, P 0.177 |
| symptoms worse during stress | 3 | 5.0 | 8 | 13.3 | $x^2=2.49, P 0.114$ |

(N.B. two cases had primary amenorrhea) * Significant **highly significant

Table (3-B) shows the frequency of premenstrual symptoms among dialysis women before and after dialysis, it is found that, the most common premenstrual symptoms after dialysis are feeling cold, abdominal bloating, dull or headache, breast tenderness and pale face with highly statistical significant difference. Also there are statistically significant difference between dialysis women as regards short temper and stool changes after dialysis than before dialysis. While no statistically significant difference regarding premenstrual mood changes, depression and migraines or tension before and after dialysis among study group.

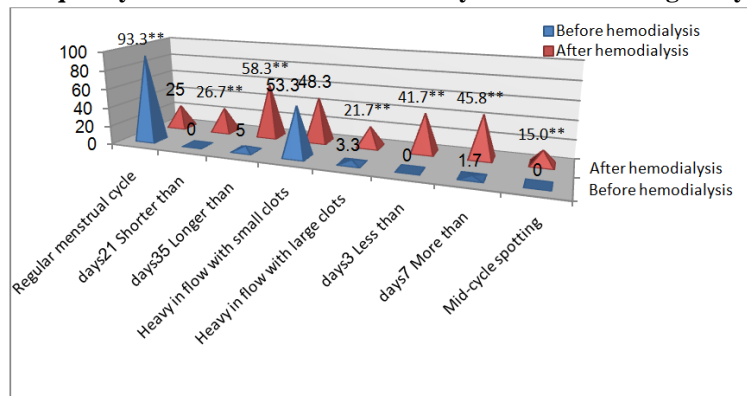
Table (3- C): Frequency Distribution of Menstrual Pain among Dialysis Women.

| Menstrual pain | Before hemodialysis (n=60) | | After hemodialysis (n=60) | | Significance test |
|------------------------------------------------------------------|----------------------------|------|---------------------------|------|-------------------------|
| | No | % | No | % | |
| - Lower back pains | 33 | 55.0 | 41 | 68.3 | $\chi^2=2.14$, P 0.143 |
| - Diarrhea or loose stools at the onset of period | 8 | 13.3 | 15 | 25.0 | $\chi^2=2.62$, P 0.106 |
| - Increasing pain during exercise or passing of stool | 16 | 26.7 | 21 | 35.0 | $\chi^2=0.96$, P 0.326 |
| - Abdominal pain | 34 | 63.3 | 38 | 56.7 | $\chi^2=1.24$, P 0.265 |
| - Pelvic pain | 16 | 26.7 | 19 | 31.7 | $\chi^2=0.36$, P 0.549 |
| - Pain before and at the beginning of period | 39 | 65.0 | 42 | 70.0 | $\chi^2=0.32$, P 0.571 |
| - Pain at the end of period | 0 | 0.0 | 2 | 3.3 | FET, P 0.248 |
| - Nausea or vomiting accompanied with pain | 4 | 6.7 | 8 | 13.3 | $\chi^2=1.48$, P 0.224 |
| - Decreasing pain during exercise or during the passing of stool | 2 | 3.3 | 2 | 3.3 | ---- |
| - Increasing pain during emotional stress | 2 | 3.3 | 2 | 3.3 | ---- |

* Significant **highly significant

Table (3-C) shows the frequency of menstrual pain among dialysis patients before and after hemodialysis, it is found that the percentage of patients suffering from abdominal pain, lower back pain and pain before and at the beginning of period are more than 50% and nearly the same before starting dialysis and after starting dialysis with no statistically significant difference.

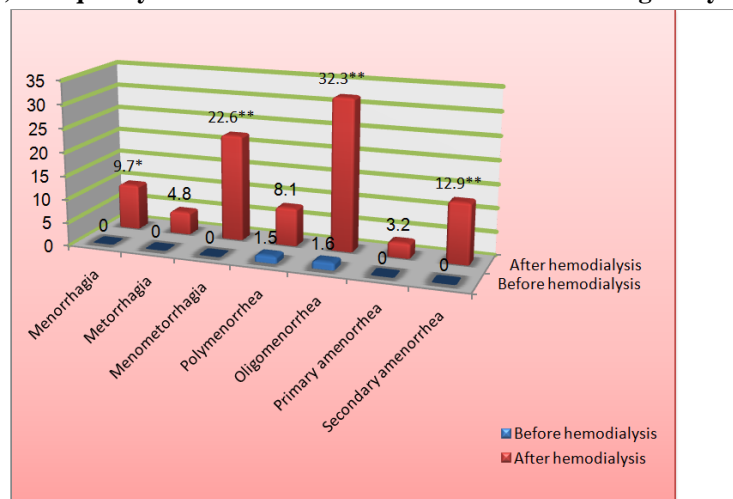
Figure(1): Frequency Distribution of Menstrual Cycle Pattern among Dialysis Women.



* Significant **highly significant

Figure (1) represents the frequency of menstrual cycle pattern among dialysis women before and after dialysis, it is found that, there are highly statistically significant difference (p 0.000) among study group before and after hemodialysis regarding menstrual cycle patterns (menstrual irregularities, shorter than 21 days, longer than 35 days, less than 3 days and more than 7 days) and mid-cycle spotting . Also there was is statistically significant difference about heavy flow with clots.

Figure (2): Frequency Distribution of Menstrual Disorders among Dialysis Women.



* Significant **highly significant

Figure (2) represents the frequency of menstrual disorders among dialysis women before and after dialysis, it's found that the most of dialysis women have oligomenorrhea (32.3%), menometorrhagia (22.6%) and secondary amenorrhea (12.9%) with a highly significant difference before starting hemodialysis and after starting hemodialysis.

VII. Discussion

Reproductive problems are more common in patients from both sexes with end-stage renal disease. It has been reported that in female patients hypothalamic-hypophysial parameter is interrupted due to increment in growth hormone and prolactin levels as a result of uremia, and that libido declines in both women and men (Deniz et al., 2011)

The present study aimed for evaluation of gynecological problems among hemodialysis women at the study setting. This aim was significantly achieved through; assessment of general characteristics, obstetrical and gynecological history and menstrual cycle questionnaire. Because hemodialysis women were significantly affect menstrual cycle. The present study revealed that near two third of the patients aged between 20 to 40 years old in opposite to Afifi (2008) he reported in the 9th annual report of Egyptian renal registry that, the mean age of patients on dialysis were 49.8 years. Also the present result come accordance to Badheeb (2006) who mentioned in his study at Yemen that, the mean age of hemodialysis patients was range between 31 to 40 years.

Nearly one third of patients are more than 40 years old Arogundade et al., (2005) in their study showed similar lower mean age for hemodialysis patients had a mean age of 42.96 ± 12.45 years. In the current study the married women were more than two third, as the result of Mahboob and Zohreh (2012) in their study which was the married women were less than three fourth and Hatice and Havva (2011) in their study in turkey which was more than three quarter of women were married.

In the current study, only less than one fifth of women were using contraceptive methods. Most of whom were using contraceptive methods using IUD, contraceptive pills, one month injection and tubal ligation. In accordance to Deniz et al., (2011) they stated in their study that, more than half of hemodialysis women did not use any method of contraception, more than two fifth of women did not use contraceptive method but their partners were using contraceptive, and 3% they were protected with tubal ligation.

Ruth and Lesley (1997) added in their study about gynecological abnormalities in women with kidney failure that, more than one tenth of women had never received any contraceptive method, less than one fifth of women were using oral contraceptive pill, five percent of study group patients with an intrauterine contraceptive device, which aggravate menorrhagia and increases the risk of systemic infection in immunosuppressed women, were advised to use another method.

The fertility is reduced among dialysis women due to anovulation and hyperprolactinemia which resulted from uremia, in the present study revealed that near one third of the married women were null gravida and nullipara, this result agreed with Rohina, Raja & Nakul (2009) in their study they reported that, more than one third of study group were null gravida and nullipara. In the present study found that, more than one fifth of the studied women had complications during labor and most of these complications due to preeclampsia and intrapartum hemorrhage. This result agreed with An-Shine et al., (2002) they stated in their study that, near one third of their study group were suffering from preeclampsia and anemia during labor.

Also Shan et al., (2008) they added in their study that, in the cessation of urine output enlightening proteinuria, the finding of preeclampsia depends on the evaluation of aggravating blood pressure. Other useful keys might embrace variances in placental doppler blood flow and fetal growth limitation. The incidence of pre-term delivery due to occurrence of preeclampsia, kidney capacity adulterations, premature rupture of membrane, fetal distress and premature labor. Intrauterine uterine growth restriction was present in one fifth of pregnancies (Lessan, 2002).

The present study shown that, more than two fifth of women had abortion, most of them had spontaneous abortion and only few cases had induced abortion. Rohina, Raja & Nakul (2009) they reported in their study that spontaneous abortion in more than half of the studied women, nearly two fifth of abortions occurred in second trimester, less than one quarter of women had therapeutic abortion, less than one fifth had neonatal deaths and more than one tenth of them had still births babies.

The most common causes of abortion among current study group were; hypertension, toxoplasmosis, increasing serum urea and serum creatinine in blood, carry heavy things, increase muscular efforts, exposure to radiation and other unknown causes. John and Ellis (1987) added in their study that, progression in obstetric care and the dissipation of illegal abortions had resulted in an impressive turn down in the occurrence of obstetric renal failure.

Women on hemodialysis had slump plasma estrogen levels (related to hyperprolactinemia) ensuing in vestigial vaginitis, and pruritus. Normal mid-cycle karyopyknosis was missing, in the current study more than two fifth of women had abnormal vaginal discharges, these discharges different in color; cheesy white, yellowish and green color. More than three fourth of the women whom had vaginal discharges had odorless

vaginal discharges and the remaining of them had offensive odor (All of who had this abnormal discharges with all colors had itching).

In the other side **Manish & Raja (2012)** they stated in their study that, the frequency and sequence of vaginal infections stay the same as in normal natives. **Tavallai et al., (2007)**; **Davis et al., (2004)** in their study added that, vaginal congestion occurred in dialysis women, which is undoubtedly derivative by chronic injure related to hypertension or diabetes, Premature estrogen withdrawal with frigidity and loss of sexual attractiveness.

Also the current study represents that less than one fifth of the considered women had abnormal vaginal bleeding, the most common causes of the vaginal bleeding were; ovarian cyst, hypertension, heparin giving during dialysis session and other unknown causes. This result came in the same line with the result of **Thaysen, Olgaard & Jensen (2004)** they postulated in their study that, anticoagulant and heparinization during hemodialysis exaggerate abnormal uterine hemorrhage among hemodialysis women.

Prolactin exudation was assessed in patients with chronic kidney failure. In cases with chronic renal failure prolactin levels was elevated, because of both diminished metabolic clearance and an elevated manufacture was widespread, The elevated prolactin levels can lead to impaired hypothalamic-pituitary function, galactorrhea and subscribe to sexual dysfunction in these women. In the current study revealed by assessment of symptoms that, near one third of the studied women had galactorrhea, some women who had galactorrhea said that, they had breast milk which enough to feed a baby and some of single women in this study had galactorrhea.

Lim and Kathpalia (2013) in their study about ovarian dysfunction among chronic kidney disease women and **Kadioglu et al., (2005)** reported that, It has been assumed that upraised prolactin levels may subscribe to the diminishing of hypothalamic-pituitary function and cause galactorrhea in these patients. **Deniz et al., (2010)** and **Lessan et al., (2004)** in their study they situated that, high levels of prolactin in near three quarter patients. In addition galactorrhea was reported in two fifth of hemodialysis patients.

The present study revealed that, there was no significant difference of gynecological diseases before and after hemodialysis as; endometriosis, uterine fibroid, uterine adhesions, fallopian tube adhesions and pelvic adhesions. This result disagreed with **Cochrane and Regan (1997)** they reported in their study that, women on hemodialysis suffer from different gynecological problems which are frequently unrecognized, Many of these gynecological disorders are caused or exacerbated by the renal disease or its treatment.

While, in the current study seen that, there were statistical significant difference in ovarian cyst formation, among dialysis women before and after dialysis. This result came in same line with **Thaysen, Olgaard & Jensen (2004)** they revealed that, the increasing in ovarian cyst formation can occur in uremic patients. **Cochrane & Regan (1997)** added that, eight patients from studied group had ovarian cysts, two which have been aspirated and the remaining six will be followed up with future scans. The premature ovarian failure and subfertility were common among women undergoing hemodialysis.

The current study represented also that, there was highly statistically significant difference among study group before and after hemodialysis regarding menstrual cycle patterns (menstrual irregularities, shorter than 21 days, longer than 35 days, less than 3 days and more than 7 days) and mid-cycle spotting. This result came as the same result with **Maria et al., (2009)** they stated in their study that, the three quarter of the patients had menstrual disturbances during dialysis, **Cochrane & Regan (1997)** added that, menstrual disorders were accounted in more than four fifth of the studied women. Moreover **Maria et al., (2009)** they added that, the menstrual cycle predictably prevail irregular with little flow after maintenance on dialysis.

The current study revealed that, there were highly significant difference among hemodialysis women as regards; Menorrhagia, menometorrhagia, oligomenorrhea, Polymenorrhea, primary amenorrhea and secondary amenorrhea. Near one third of study women had oligomenorrhea, more than one fifth of them had menometorrhagia, more than one eighth of them had secondary amenorrhea and two cases in the current study had primary amenorrhea (they did not have menstruation at the time of data collection, they aged 20 and 22 years old, both of them were underweight in body mass index, both of them have kidney problems before age of puberty which affected growth hormone).

This result agreed with **Sciarra (2001)** who mentioned in their study that, there was reasonably teeny cycle changeability among women between the ages of 20 years to 40 years, near one half of the studied dialysis women had eumenorrhea, less than one third of them had oligo/ hypomenorrhea or amenorrhea and nearly one fifth had hypermenorrhea in, **Lessan et al., (2004)** they reported that less than two fifth of the studied women had amenorrhea, near one third had Oligomenorrhea, one fourth had eumenorrhea and only 5% of them had polymenorrhea,.

Maria et al., (2009) they stated that, the most common menstrual disorders among kidney failure women on hemodialysis was amenorrhea. **Ruth & Lesley (1997)** revealed that, 3% of study group was a 17 year old with primary amenorrhea. **Deniz et al., (2011)** they showed that more than two fifth of patients with chronic renal failure had menstrual problems. In summation, near one half of the studied dialysis women

became amenorrhea after initiation on hemodialysis program and amenorrhea sustained in more than one third of women during the study. The most considerable cause of these menstrual disorders is increment the levels of prolactin and LH related to impaired hypothalamic-pituitary-ovarianaxis.

Holley (1997) in his study added that, oligo/ anovulation is the main element for these menstrual cycle disorders in chronic renal failure women. menorrhagia develops preceding to significant blood loss and raised transfusion needs. Uremia was accompanying with hypothalamic-pituitary-gonadal dysfunction (**Wolf, 2002**). Hyperprolactinemia was common in women with chronic kidney disease on long term hemodialysis because of elevated secretion and impaired metabolic clearance of prolactin (**Sievertsen, 1980**).

VIII. Conclusion

Based on the main study findings, it could be concluded that:

- Near one third of the patients aged between 20 to 40 years old, The married women are more than half. More than four fifth of women are house wife. More than two fifth of women had abortion, the most common causes of abortion was hypertension and toxoplasmosis. More than two fifth of women had abnormal vaginal discharges.
- Less than one fifth of the studied women had vaginal bleeding. Near one third of the studied women had galactorrhea.
- There was no significant difference of gynecological diseases before and after hemodialysis except ovarian cyst and infertility, while there was statistical significant difference.
- There were highly statistical significant difference of the study group according to pale face, feeling cold, breast tenderness and/or swelling, abdominal bloating and headache after dialysis than before dialysis. Also there was statistically significant difference between dialysis women as regards mood and stool changes after dialysis than before dialysis.
- There was highly statistically significant difference among study group before and after hemodialysis regarding menstrual cycle patterns (menstrual irregularities, shorter than 21 days, longer than 35 days, less than 3days and more than 7days) and mid-cycle spotting.
- There was highly significant difference among hemodialysis women as regards; menometorrhagia, oligomenorrhea and secondary amenorrhea.

IX. Recommendations

According to the findings of the present study, the following suggestions are recommended:

For patient: Encourage the women for immediate informing any abnormalities that may suspected for any gynecological or obstetrical problems.

For staff: Continuous monitoring for any menstrual or gynecological abnormalities and referral for gynecological clinic.

Administrative: Scheduled regular visits for gynecological clinic to assess and manage any problem and prevent any complications

For further researches:

- 1) The effect of hemodialysis on occurring of vaginal infection and how to prevent it.
- 2) Utilization of different updating effective intervention for hemodialysis women with galactorrhea.
- 3) Reapplication of this study on large sample size in another setting.

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