Evaluation of C-reactive protein with chronic disease in menopausal women

الاهداء

اهدي هذا البحث

الى :-

- **الوالدين الكريمين حفظهما الله**
- **الى كل افراد اسرتي**
- **الى روح جدي وجدتي رحمهما الله**
- **الى كل الاصدقاء, ومن كانوا برفقتي ومصاحبتي اثناء دراستي في الجامعة**
- **الى كل من لم يدخر جهدا في مساعدتي**
- **والى كل من ساهم في تلقيني ولو بحرف في حياتي الدراسية**

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Abstract:

The term "menopause" refers to the end of menstruation for at least 12 months as a result of ovarian failure rather than from any physiological or other medical reason .Every woman experiences menopause naturally, which is accompanied by physiological and psychological changes linked to several health issues, including inflammation and chronic illness. The most readily available acute phase protein sensitivity biomarker for systemic inflammation is C-reactive protein (CRP). Goal of present study target on examined the relationship between women's menopausal status and high-sensitivity C-reactive protein (CRP) levels in serum according to present of chronic disease. The ccurrent investigation involved 60 menopause women with different ages from21-12-2023 to 1-4-2024, after recording information such as :age, residency, blood group and if suffered from chronic disease to correlated with C-reactive protein percent.

Results found**:** The highest percentage of disease was found in the age categories [43-53 It was the highest rate of 45.3%, while the lowest incidence rate in the age group [32-42] year was 9.4%. According to residency, varied with the highest percent showed in Urban (62%), although varied the percentage of blood group in women in four types (A^+, B^+, AB^+ and O^+) with the highest percentage appeared with A+ group about (45%) ,while the lowest in B+ . Menopause women which suffered from chronic disease reported low percent about 33% at the same time seropositive result for CRP test also have low rate compared to positive result as (27%), (67%) respectively.

Conclusion: The current study pointed about the correlation subject between CRP and chronic disease in study women, results find there is an associated between them in age groups [43-64] , that ensure an important effective for acute protein phase with chronic disease .

الخلاصة:

يشير مصطلح "سن اليأس" إلى انتهاء الدورة الشهرية لمدة 12 شهرًا على الأقل نتيجة فشل المبايض وليس لأي سبب فسيولوجي أو طبي آخر. كل امرأة تمر بمرحلة انقطاع الطمث بشكل طبيعي، والذي يصاحبه تغيرات فسيولوجية ونفسية مرتبطة بعدة أمراض صحية بما في ذلك الالتهابات والأمراض المزمنة. إن المؤشر الحيوي الأكثر سهولة لحساسية البروتين في المرحلة الحادة للالتهاب الجهازي هو بروتين C التفاعلي (CRP) .هدف الدراسة الحالية هو فحص العلاقة بين حالة انقطاع الطمث لدى النساء ومستويات البروتين التفاعلي C عالي الحساسية (CRP) في المصل وفقًا لوجود الامراض المزمنة. شملت الدراسة الحالية 60 امرأة في سن اليأس بأعمار مختلفة للفترة من (21-12-2023 إلى 1-4-2024،) بعد تسجيل معلومات مثل: العمر، مكان الإقامة، فصيلة الدم وما إذا كانت تعاني من مرض مزمن لتحديد نسبة البروتين التفاعلي.C وعلاقته بها.

توصلت النتائج أن أعلى نسبة إصابة بالمرض وجدت في الفئات العمرية [43-53] سنة وكانت أعلى نسبة 45.3%، بينما أقل نسبة إصابة في الفئة العمرية [32-42] سنة كانت 9.4%. حسب مكان الإقامة، تباينت أعلى نسبة ظهرت في المدينة (62%)، و تباينت نسبة فصائل الدم لدى النساء في أربع فصائل وسجلت النساء في سن اليأس اللاتي يعانين من أمراض مزمنة نسبة منخفضة حوالي 33% في نفس الوقت كانت نتيجة اختبار ايجابية بروتين الطور الحاد لدهن منخفضة مقارنة من النساء الاصحاء بنسب (27%) و (67%) على التوالي.

الاستنتاج: أشارت الدراسة الحالية إلى موضوع الارتباط بين بروتين CRP والأمراض المزمنة لدى نساء الدراسة، وقد توصلت النتائج إلى وجود ارتباط بينهما للفئات العمرية من (43-64) الدور المهم لتأثر بروتين الطور الحاد مع الأمراض المزمنة.

Introduction:

Postmenopause is natural process in the life of every women with physiological and psychological changes associated with health condition such as obesity, overweight, cardiovascular disease and inflammation (Reazaee , Ali ,Javaher and Rashidlaminer 2022)

Menopause is the permanent cessation of menstrution resulting in the loss of ovarian follicle development (sherwin, 2001) (Spinelli , 2004)

The age at menopause appears to be genetically determined and is unaffected by race , socioeconomic status, age at menarche , or number of prior avulations . Factors that are toxic to the ovary often result in an earlier age of menopause (Adena, Gallagher 1982)

Women who have had surgery on their ovaries , or have had a hysterectomy , despite retention of their ovaries , may also experince early menopause (Siddle, Sarrel, and Whitehead 1987)

Menupuse occurs when female stopped ptoducing hormoes that cause menstrual period and have gone without a pdriod for 12 months in arow . Once thes has occurred women enter postmenopause and can't get pregnant because the ovaries have stopped releasing eggs (Dalal and agarwal , 2015)

CRP is one of the plasma protein that

Produced in the liver , and its increased is a response to infections disease , tissue damage or inflammation (sproston and Ashworth , 2010)

CRP is avascular inflmmatory marker for endothelial dysfuntionassociated with risk of diabetes mellitus and coronary heart disease .

Asensetive biomarker and a protein of acute phase , CRP is the most accessible for identifying individuals with systematic inflammation IL- 6,IL-1 and TNF alpha boost hepatic CRP production (Ridker , 2016)

This protein needs 6-12 hour at the initiation of the disease to reach it peak in blood and could increase to reach 100 folds. This protein the half life is 15-25 hour but decrease to its normal values at the recovery constant in an individual ,both with regard to time of day and over days and months even over months to year(Li Jj 2003)

Two functional properties of CRP have been demonstarted firstly ,its ability to recognize foreign pathogens as well as , phospholipids constituents of damage cells resulting in elimination of the target cells by the intraction with both humeral and cellular effecter systems secondly , it's ability to modulate the function of phagocytes cells(Park , Kim 2003)

A growing body of evidence has supprted the idea that cardiovascular disease including coronary heart disease , ischemic stroke and acute myocardial infarction , develop , at least in part because of a chronic low- level CRP of the vascular endothelium .

Apparently , besides of being directly ivolving in low grade chronic systemic inflamation , high- sensitivitivity CRP is emerging as the strongest and most independent predictivr risk factor for atherosclerosis and CVD (Ridker , Hennekens , Buring , et al 2002)

Materials and method:

1- The study included 60 women with different ages from21-12-2023 to 1-4-2024, after recording information about women.
2- Blood samples: 5ml of blood were taken from patient and isolated serum for immunological study.
3- Immunological study : CRP level were determined after separation of serum (5 mL) blood samples were placed in plastic tubes at 3000 rpm centrifuge and the serum patients were stored at -4 ° C to freeze and collect them to determine the percentage of positive reaction according to the manufacturer's instructions For the kit.

Results and discussion:

The current study was conducted on 60 women 40 with post-menopause and 20 women pre- menopause as a control for ag from [32-75] year with different locations for the period from 1/11/2023 to 15/3/24. The highest percentage of disease was found in the age group [43-53] years. It was the highest rate of 45.3%, followed by the age group [54-64] year, while the lowest incidence rate in the age group [32-42] year was 9.4% (Fig.1).

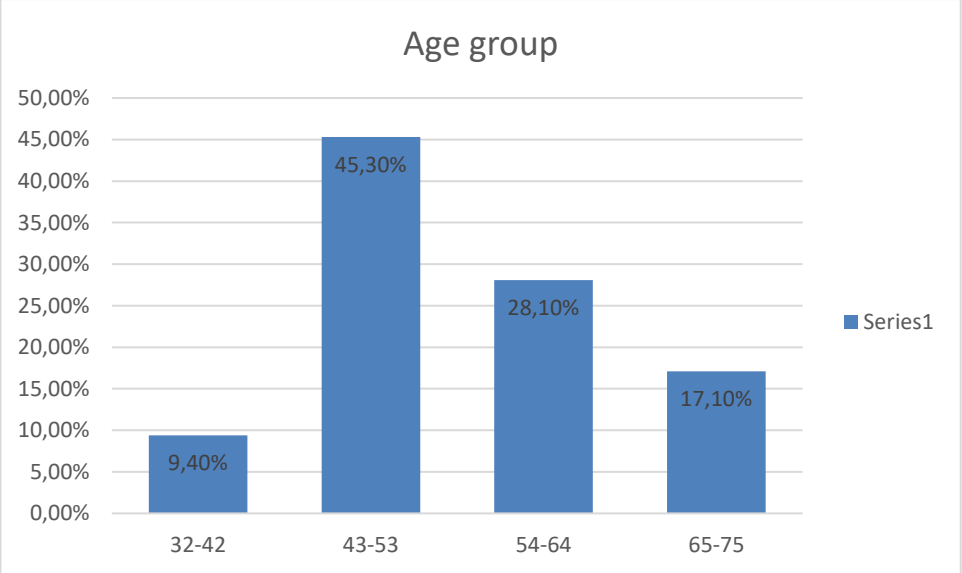

Figure (1): Distribution of study population according to Age group

Given that the condition of the current study population with in the hormonal and physiological activity, it is possible that the menopause period may be affected by several cellular and immune factors, including the types of the blood.

The study shows a link to blood type A and the effect is clearly higher in women during the period of early menopause. The reason may be due to the presence of red blood cells of type A, which may affect the condition of the body women.

The current study showed that the population of study variation according to blood group (A+, AB+ , B+ and O+) ,the highest percentage appeared with A+ group about (45%) ,while the lowest in B+ (Fig. 2).

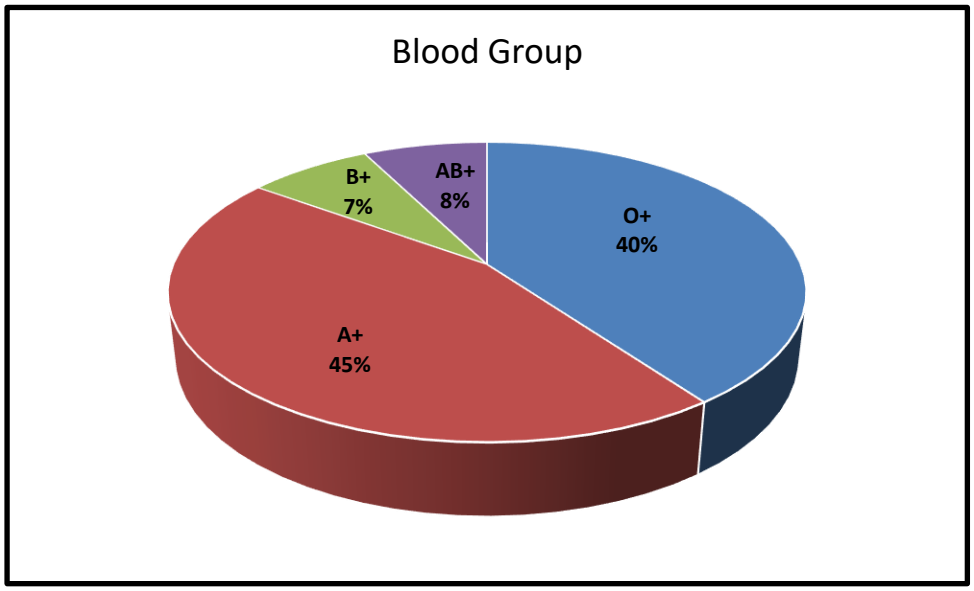

Figure (2): Distribution of study population according to Blood group

The study population recorded residence variation. with the highest percentage shown in Urban (62%) (Fig. 3).

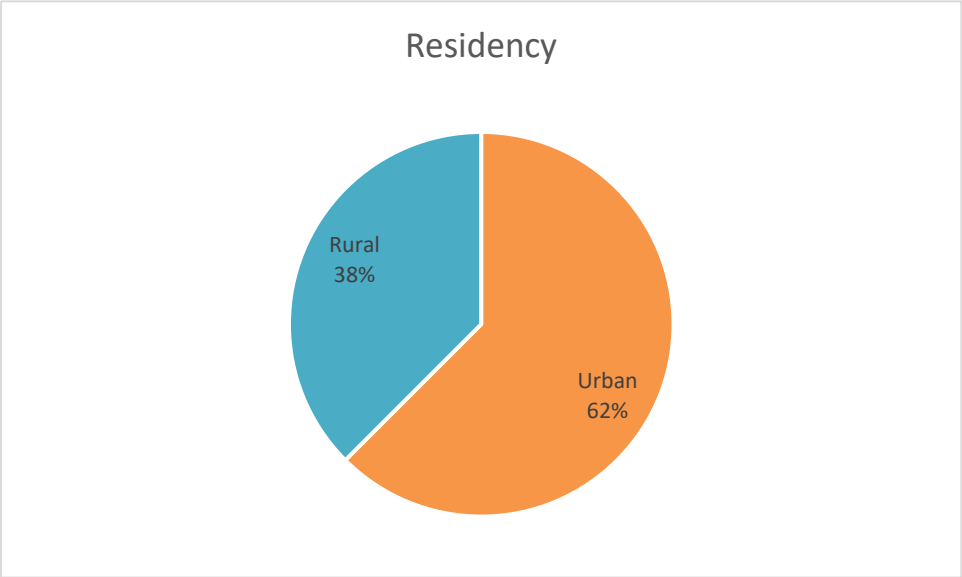

Figure (3): Distribution of study population according to residency

The current study shows a high percentage of menopausal women in the regions Urban than in rural areas, the state of the body's physiological and immunity in the city is affected by pollution factors, such as the paint of cars and factories, and the increase in smokers. As well as the type of food such as modified food, soft drinks, and sugars Like that women's physical activity in the city is less than in the countryside because of the availability of life and safety requirements, Home Business As for the countryside, women practice agriculture and rearing Animals as well as poke exposure to solar radiation All these factors make a beautiful woman energetic and active. Often.

Figure (4) shows the percentage for present chronic disease in women with menopause, 33 % of women reported suffering from chronic disease and 67% from them without as healthy women.

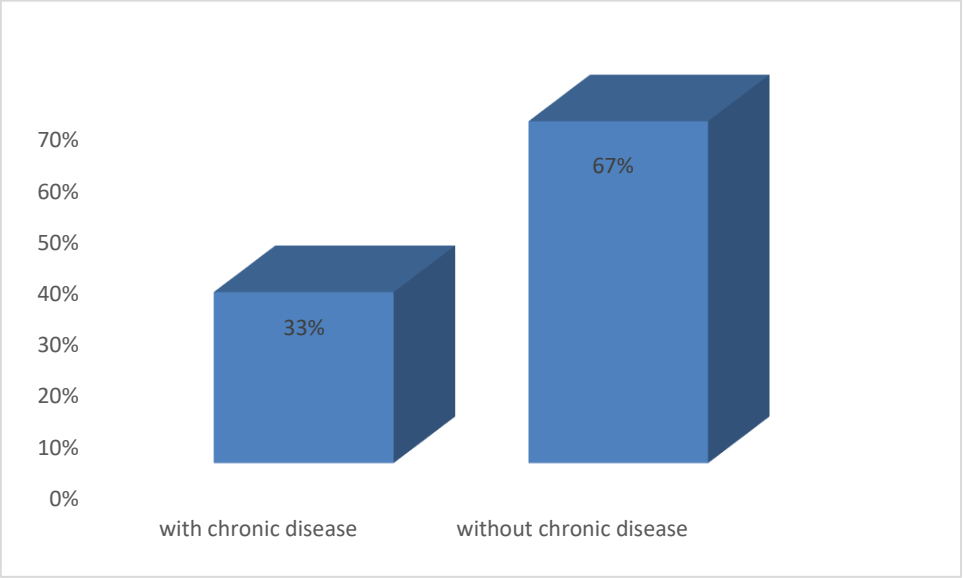

Figure (4): Percentage of chronic disease in study population

The current study indicated that the percentage of women who lived in the city during menopause was the largest percentage (62). And as we explained previously, the requirements of life and business are available. This has a positive effect on the health of the elderly in general, as they need rest and to enjoy city life.

Therefore, they will suffer from fewer chronic diseases.

A low percentage for seropositive C-reactive protein test which appears in the rate 27%, while the highest rate appear for negative result 73% (Fig. 5).

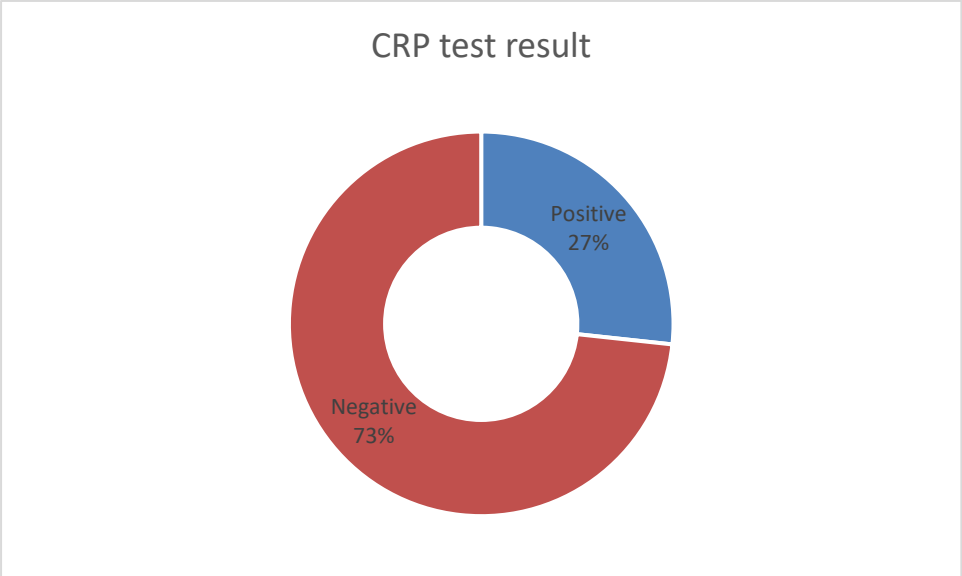

Figure (5): percentage of positive in sample study result for CRP test

CRP is a non-specialized test that rises with any injury or inflammation in the body, so the appearance of low levels is associated with the presence of chronic diseases, which the table showed (1) Reduced rates of chronic diseases, including women Especially the age group (32-42) Both CRP and the rate of chronic diseases increased Women in the second age group.

The current investigation revealed that age groups [43–53] and [54–64] had high rates of both chronic disease and CRP, with comparisons between them showing 15% and 16% of present disease, respectively (Table 1).

Table 1. Seropositive C-reactive protein associated with chronic disease

Age group	No.	CRP/positive	Chronic disease
32-42	5	1(2%)	0
43-53	28	9 (15%)	4 (7%)
54-64	17	4 (7%)	10 (16%)
65-75	10	2 (3%)	6 (10.3%)
Total	60	16 (27%)	20 (33.3%)

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