

Average age of Menopause in Kerala Women & Factors Influencing age of Menopause

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ABSTRACT

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Background: Menopause marks an important transition in a woman's life and is a significant marker of reproductive ageing in them. It is important to know the age of menopause in a particular population since it marks the cessation of fertility and because of its implications on other aspects of health like osteoporosis and cardiovascular diseases.

Objective: To determine the mean age of natural menopause in Kerala women and the influence of various socio – demographic, reproductive or physical factors on age of menopause.

Materials and Methods: A cross – sectional study was done on 120 post menopausal women above 40 years of age. Absence of menstrual cycles for one year was taken as indicative of menopause. The data essential for the study was collected from subjects through semi structured questionnaire.

Results: The mean (+/- s.d) age of menopause in our population was calculated to be 48.3 (\pm 4.15) years with median age being 50 years. Of the various socio – demographic and reproductive factors that influenced the menopausal age, the use of OCP alone achieved statistical significance.

Conclusion: The age of onset of natural menopause in Kerala women was determined to be 48.3 (\pm 4.15) years with median of 50 years. This mean age was found to be slightly older than the age of menopause in other Indian states and lesser when compared to Western literature. Most of the socio – demographic and reproductive factors except 'use of OCP' showed no significant correlation with age of menopause in our study.

Keywords: Menopause, Onset, Women, India, Factors affecting age of onset.

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INTRODUCTION

Natural menopause is defined as the permanent cessation of menstruation for at least one year resulting from the loss of ovarian follicular function. It may be viewed as a transition from middle age to old age as it marks the end of reproductive phase of a woman's life.

The average age of menopause is about 51 years in developed countries which is higher when compared to other developing nations.¹ Most Indian studies have shown that the median age of menopause is 48 years indicating a lower age at menopause for Indian women compared to the west.

Several health related complications can occur in the post menopausal period following oestrogen withdrawal. An early onset of menopause can reduce the reproductive life span of a women and expose her to a number of complications such as increased risk of osteoporosis, cardio vascular diseases, hormone related

cancer etc. Several socio demographic and reproductive factors are known to influence the age of onset of menopause. However the influence of these factors was found contradicting in several of the studies carried out in different parts of the world including India.

The literacy rate and health statistics of Keralites is much better when compared to their counter parts in other parts of the country. In Kerala, both access to and utilization of health care particularly among women is quite high compared to the women in rest of the country.² However no studies have been carried out in Kerala, to find out the reproductive lifespan of women. The present study was planned to determine the mean age of natural menopause in Kerala women and any socio demographic or reproductive factors that may affect this timing of menopause.

It would be beneficial to know the age at menopause in our population since it helps to estimate of the number of years the women population survives in

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the post menopausal period. Factors influencing age of menopause would also help the health professionals to look for any potentially modifiable environmental factors that may influence its onset.³ The results of this study would also help in planning of health services in menopause units and thus will have a bearing on reducing the risk for several chronic diseases affecting women.¹

MATERIALS AND METHODS

A cross sectional study was done on post- menopausal women above 40 years of age who visited a tertiary care centre either as patients or bystanders. 120 women who came from different parts of Kerala and had attained natural menopause were selected. Those women who have undergone surgical menopause and/ or those below 40 years of age were excluded from the study. The study was carried out from February 2010 to May 2010. The subjects were briefed about the study protocol and informed consent was taken. The clearance from the ethical committee of the institution was taken for the study. The data essential for the study was collected from subjects through semi – structured questionnaire containing 22 questions typed both in English and local language Malayalam. The primary objective of our study i.e.,” Average age at menopause in Kerala women” was directly recorded from the subjects. They were also asked if they could recollect their age of onset of menses as well as their mother’s age of menopause. Other details in the questionnaire were designed to study the various socio-economic, demographic and reproductive characteristics. This included factors such as marital status, age of marriage, age at first and last pregnancy, education, employment, diseases like diabetes mellitus, hypertension, dyslipidemia, use of oral contraceptive pills, duration of menstrual bleeding, diet and religion.

STATISTICAL ANALYSIS

The questionnaires were coded and entered, and data was analyzed by SPSS – 11 version for windows software. The mean, median, maximum and minimum age of menopause was calculated. Also the mean age of menarche was estimated from the data. The student t – test and the non – parametric “Mann- Whitney” tests were used for doing the analyses. The mean age of menopause was obtained for each group of variables taken in the study and these were compared to find if any of the factors influenced the age of onset of menopause. A ‘p’ value less than 0.05 was considered statistically significant.

RESULTS

The mean (+/- S.d) age of menopause in our population was found to be 48.3 (\pm 4.15) years with median age being 50 years. The mean age of menarche was found to be 14.1 (\pm 1.47) years with a median of 14 years. (Table 1)

Table 1. Shows the mean, median, minimum and maximum age of menopause and menarche from the sample of population.

Variables	Mean \pm SD	Median	Minimum	Maximum
Age at menopause (years)	48.3 \pm 4.15	50.0	31	55
Age at menarche (years)	14.1 \pm 1.47	14	11	20

Menopause occurred mostly in the age range of 46 – 50 years among women in Kerala. (Figure 1)

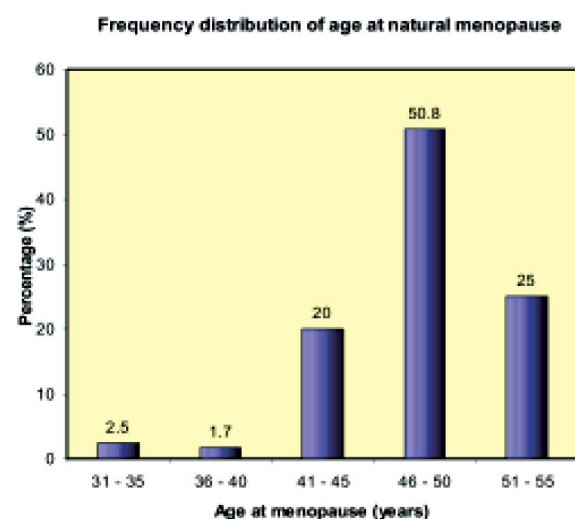


Figure 1. Showing age distribution of menopause

Among the various socio-demographic, reproductive and physical factors that influence the age at onset of menopause we could identify “use of OCP” as the only statistically significant factor. Prior use of OCP may predispose the subject to an early onset of menopause. While those who have never used OCP had much later onset of menopause. A delay in “mother’s age at menopause” and use of vegetarian diet showed a trend towards later age of menopause, however the association with these factors were not statistically significant (Table 2).

We could not find any significant association of other socio – demographic and reproductive factors such as age at menarche, marital status, age of marriage, parity, age at first and last pregnancy, education, employment, diseases such as diabetes, hypertension, dyslipidemia, duration of menstrual bleeding, diet and religion with age at natural menopause.

Table 2. Showing other variables			
VARIABLES	GROUPS	AGE AT MENOPAUSE (mean ± SD)	'p' VALUE
1. Use of Oral Contraceptive Pills	No	48.6 ± 3.69	0.031 (P< 0.05) (NPT)
	Yes	42.8 ± 7.91	
2. Mother's age at menopause (years)	? 44	46.0 ± 4.43	0.063 (t - Test)
	? 45	48.5 ± 4.07	
3. Diet	Vegetarian	50.1 ± 3.02	0.077 (t - Test)
	Non - vegetarian	48.1 ± 4.24	
4. Age at menarche (years)	? 13	47.8 ± 4.88	0.420 (t - Test)
	? 14	48.5 ± 3.81	
5. Marital status	Married	48.2 ± 4.18	0.304 (NPT)
	Never married	50.3 ± 3.14	
6. Age of marriage (years)	? 20	48.5 ± 3.65	0.654 (t - Test)
	? 21	48.2 ± 4.53	
7. Parity	Nulliparous	47.2 ± 4.27	0.476 (NPT)
	Multiparous	48.4 ± 4.17	
8. Age at first pregnancy (years)	15 - 25	48.4 ± 4.11	0.812 (t - Test)
	> 25	48.2 ± 4.38	
9. Age at last pregnancy (years)	15 - 25	47.6 ± 4.01	0.453 (t - Test)
	> 25	48.43 ± 4.18	
10. Education	Illiterate	44.0 ± 5.29	0.115 (NPT)
	Literate	48.47 ± 4.08	
11. Employment	Not employed	48.5 ± 3.71	0.478 (t - Test)
	Formerly/currently		
	Employed		
12. Diabetes	No	48.2 ± 4.42	0.673 (t - Test)
	Yes	48.6 ± 3.34	
13. Blood Pressure	No	48.3 ± 3.83	0.919 (t - Test)
	Yes	48.4 ± 4.70	
14. Cholesterol	No	48.2 ± 4.29	0.564 (t - Test)
	Yes	48.8 ± 3.40	
15. Duration of Menstrual bleeding (days)	? 5 days	48.0 ± 4.35	0.350 (t - Test)
	> 5 days	48.7 ± 3.90	

DISCUSSION

In the present work, the mean age at natural menopause among women in Kerala was estimated to be 48.3 (\pm 4.15) years with the median age being 50 years. This is slightly older than the age of menopause reported from other parts of India and lesser than the age at menopause in the West. The age at natural menopause is between 45 and 55 years all over the world.^{4,5} In Northern India, a study carried out by Alka Kriplani and Kaberi Banerjee showed that the mean age of natural menopause in the population was 46.7 (\pm 3.37) years which is about three years earlier than the west.³

Our study in Kerala revealed that, in about 61% of the respondents, natural menopause occurred in the age range of 46 – 50 years and in about 30 %, the age of menopause was in the range of 51 – 55 years. In a cross sectional study conducted in Kangara district of Himachal Pradesh majority had attained menopause

between the ages 41 – 45 years. There have been many studies to find the effect of various socio – demographic and reproductive factors on the age at onset of natural menopause. Not all the studies are in agreement with each other. In the present study “Use of OCP” was the only factor found to be statistically associated with the timing of natural menopause.

Of the total 120 respondents in the study, 114 women had not used OCP in their lifetime and the mean age of menopause in them was 48.6 years. Six of the respondents who had used OCP at least once in their lifetime had attained menopause at a mean age of 42.8 years. A study conducted by Palmer JR et al, among African – American women had found an inverse relation between prior use of OCP and early onset of menopause. Another Moroccan study by Reynolds RF and Obermeyer CM in 299 women also reported the same.^{6,7} Longer duration of OCP use was found to be associated with earlier menopause in a cross – sectional Turkish study performed among 157 Turkish women by Aydin ZD et al.⁸

Those respondents whose mother's had attained an early menopause (i.e. d” 44 years) also experienced an early onset of menopause in their life. At the same time a few others had experienced a later age at menopause in which the mother's age of natural menopause was also reported to be later (i.e. e” 45 years). However this difference was not statistically significant in our study. Several other studies have suggested a significant familial association between age at menopause of mother and her daughters.^{9,10,11}

The present study also showed that the mean age of menopause in non – vegetarian subjects was lower than vegetarian subjects. (Veg 50.1 \pm 3.02 years: non veg 48.1 \pm 4.24 years). Though this was not statistically significant vegetarian diet showed a trend towards increasing the reproductive lifespan of women and hence can be beneficial to the population. The influence of dietary substances like fish, meat etc on age at menopause was studied in a cross sectional study carried out among 157 Turkish women in which it was proved that a higher fish consumption could be associated with later age at menopause.⁸

In Kerala, the better health facilities available may be a contributing factor for the higher age at menopause compared to other Indian states. The ratio of medical establishments to population is substantially higher in Kerala than in rest of India. Due to high literacy rate, social and political consciousness, people demand for better health facilities and use them better. In addition the public investment in health and general health consciousness has also served to increase private health

expenditure in Kerala. The health policy has been a continuing concern of the state governments. The health status of Kerala is characterized by high levels of education, particularly female education, lower levels of fertility, infant and child mortality and higher levels of life expectancy at birth. Hence they are enjoying a better healthier life than their counter parts in the country.^{2,12}

Our study had certain limitations

Studies incorporating a larger sample size with normal distribution i.e., equal number of subjects in the two groups of all variables studied have to be carried out to investigate the exact relation of various factors on the age at menopause. The best method to estimate the age of menopause is by the Kaplan Meier analysis where both pre and post menopausal women are included in the sample.¹¹ In our study women had to recall their age at onset of menopause and this could lead to recall bias. This can affect the accuracy of the study. Even though our study adds to a growing literature on age at menopause, further studies are essential to confirm our findings on role of oral contraceptive pills on the timing of onset of natural menopause. The findings from this study underscore the importance of further research that examines the influence of reproductive and familial history on the timing of menopause.

CONCLUSION

In conclusion, the mean age at natural menopause in Kerala women was estimated to be 48.3 (\pm 4.15) years with median of 50 years. This mean age of menopause was found to be slightly older than the age of menopause from other Indian states and lesser when compared to age at menopause in west.

Of the various socio – demographic and reproductive factors that influence the menopausal age, use of oral contraceptive pills” alone affected the age at menopause.

END NOTE

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