Role of Screening, Diagnosis and Treatment Strategy on cervical and Uterine Cancer Incidence and Mortality of Menopausal Women

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Abstract: _Objective_: _It is an epidemiological study in Ajmer municipal area, Rajasthan, India with retrospective recorded data on uterine and cervical menopausal cancer. Present study is focused on the impact of screening, diagnosis and treatment strategies on uterine and cervical cancer incidence and mortality reduction with focus on menopausal women, ageing 21-80 of Ajmer municipal area._ _Method and Methodology_: _Respondents of current study were registered and diagnosed with uterine and cervical cancer in different hospital of the Ajmer municipal area between Jan.2010-Dec.2014. Fifty two women were diagnosed with uterine cancer and 827 women were diagnosed with cervical cancer in different major hospitals of Ajmer municipal area, aged 21-80. Association between uterine and cervical cancer mortality reduction and impact of screening, diagnosis and treatment strategies on at particular ages were co-related._ _Result_: _There is evidence that uterine and cervical cancer incidence and mortality was associated with effective screening, diagnosis and treatment strategies .Post menopausal stage was associated with a 31 % reduction in uterine cancer mortality and 7 % reduction in incidence rate. 6% reduction were reported in uterine cancer incidence in peri menopausal stage with effective screening, diagnosis and treatment strategies._ _Conclusions_: _To significantly reduce the uterine and cervical cancer incidence and mortality, menopausal screening should be firmly intensified to improve long term effectiveness of screening, diagnosis and treatment strategies. Quality assessment of early screening, proper diagnosis and early treatment of menopausal women should be done via early indicators with special emphasis on physiological similarities of cervical cancer and peri menopausal stage._

Keywords: Menopause, Uterine cancer, Cervical Cancer, Incidence, Mortality

1. Introduction

1.1 Menopause

Menopause is the final cessation of menstruation, which cease female fertility. Menopause usually begins between ages 45 to 55. Gradual decline in function of the ovaries reduces estrogen hormone production. Ovulation process becomes irregular and gradually ceases. With disturbance in sleep may result in diminished concentration and lethargic behavior. Menopause is a neutral event for many women. The length of menstrual cycle and periods may vary; flow may increase or lessen.

- Pre menopause: Time before menopause, when a woman has regular monthly menstrual cycles.
- Peri menopause: Time when menopausal symptoms start (hot flushes and irregular periods).
- Menopause: The last menstrual period.
- Post menopause: one year following the last menstrual period.
- Difference in incidence and mortality rates of cancer shows combined contributions of lifestyle, demographic, environmental and hereditary factors but the screening, diagnosis and treatment strategy may play an important role on reduction of uterine and cervical cancer mortality of menopausal women.

It is an epidemiological study in Ajmer municipal area, Rajasthan, India with retrospective recorded data on uterine and cervical menopausal cancer. Present study is focused on the impact of screening, diagnosis and treatment strategies on uterine and cervical cancer mortality reduction with focus on menopausal women, ageing 21-80 of Ajmer municipal area.

2. Method and Methodology

Respondents of current study were registered and diagnosed with uterine and cervical cancer in different hospital of the Ajmer municipal area between Jan.2010-Dec.2014. Fifty two women were diagnosed with uterine cancer and 827 women were diagnosed with cervical cancer in different major hospitals of Ajmer municipal area, aged 21-80. Association between uterine and cervical cancer incidence and mortality reduction and impact of screening, diagnosis and treatment strategies on at particular ages were co-related.

3.Analysis and Results

3.1 Total Cervical (ICD-53) and Uterine (ICD-55) Cancer Cases Recorded During 2010- 2014

Total numbers of new cases of cervical and uterine cancer recorded during 2010-2014 were 879. Total cervical cancer cases were 827.Cervical cancer was found highest in post menopausal women (398 cases i.e. 48%, figure 4.2 and it was found lowest in peri-menopausal women (154 cases i.e.19%). Total uterine cancer cases were 52.Uterine cancer cases were also found highest in post menopausal women (39 cases i.e.75%, figure 4.3).One surprising fact is that uterine cancer incidence was not found among pre-menopausal women.

Table 1: Frequency Distribution of Cervical and Uterine Cancer Cases Among Pre, Peri And Post Menopausal Women During 2010-2014

Type of Cancer	Pre-menopause	Peri-menopause	Post-menopause	Total
Cervical	275	154	398	827
Uterine	0	13	39	52
Total	275	167	437	879

3.2 Year Wise Distribution of Cervical (ICD-53) and Uterine (ICD-55) Cancer Cases among Pre, Peri and Post Menopausal Women Recorded During 2010-2014

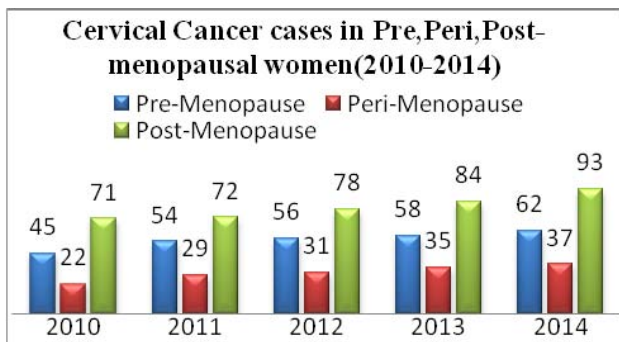| Cervical	Pre-menopause	45	54	56	58	62	275
	Peri-menopause	22	29	31	35	37	154
	Post-menopause	71	72	78	84	93	398
Uterine	Pre-menopause	0	0	0	0	0	0
	Peri-menopause	1	3	2	2	5	13
	Post-menopause	7	5	7	9	11	39

Figure: Year Wise Distribution Of Cervical Cancer (ICD 53) Cases Among Pre, Peri And Post Menopausal Women Recorded During 2010-2014
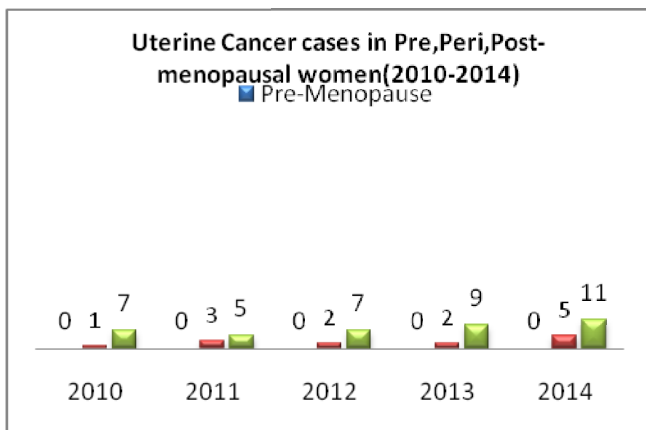

Figure: Year Wise Distribution of Uterine Cancer (ICD-55) Cases Among Pre, Peri And Post Menopausal Women Recorded During 2010-2014

3.3 Incidence and mortality rate of cervical (ICD-53) and Uterine (ICD-55) cancer cases recorded during (2010-2014)

Comparisons were made among incidence and mortality rate of cervical (ICD-53) and uterine (ICD-55) cancer cases recorded during 2010-2014 and it was found that:
- Incidence rate was highest in year 2014 i.e. 123.96.
- Mortality rate was highest in the year 2013 i.e.52.31.
- Incidence rate was lowest in year 2010 i.e. 87.19.

- Mortality rate was lowest in the year 2010 i.e.39.2.

Table: Incidence and Mortality Rate of Breast (ICD-50), Cervical (ICD-53) and Uterine (ICD-55) Cancer cases recorded during 2010-2014

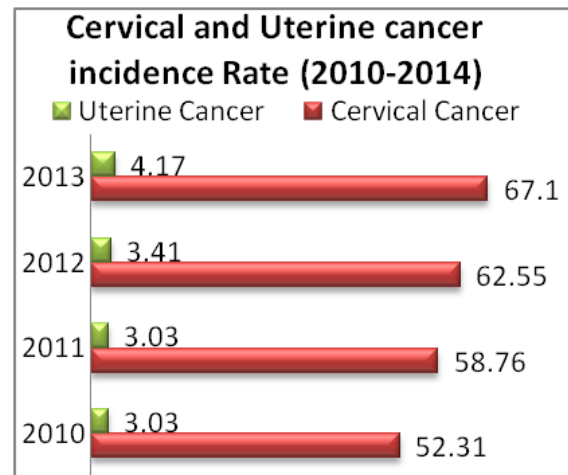| Year				
2010	Incidence Rate	52.31	3.03	87.19
	Mortality Rate	23.88	0.75	39.42
2011	Incidence Rate	58.76	3.03	95.53
	Mortality Rate	25.77	0.11	44.35
2012	Incidence Rate	62.55	3.41	98.94
	Mortality Rate	26.15	0.11	45.87
2013	Incidence Rate	67.1	4.17	111.45
	Mortality Rate	27.67	1.51	52.31
2014	Incidence Rate	72.78	6.06	123.96
	Mortality Rate	28.05	1.89	51.55

Figure: Incidence of Breast (ICD-50), Cervical (ICD-53) and Uterine (ICD-55) Cancer cases recorded during 2010-2014
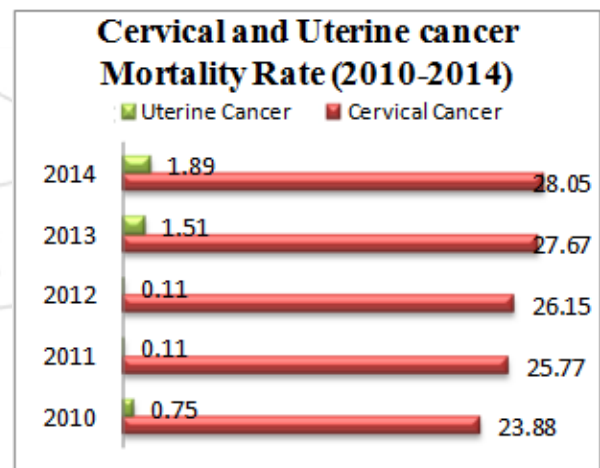

Figure: Mortality Rate of Cervical (ICD-53) and Uterine (ICD-55) Cancer cases recorded during 2010-2014

- A total of 280 cervical and uterine cancer menopausal women were selected as respondents.
- Respondents were randomly selected from fifty five wards of Ajmer municipal area. Information regarding socio-demographic characteristics, genetic history, menstrual status and screening, diagnosis and treatment strategy were obtained, analyzed and presented below.
- All collected data were normally distributed, since **Skewness** and **Kurtosis** Values were less than 1.5 and 2.2 respectively.

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Table: Frequency distribution of current menstrual status

Current Menstrual Status			Total
Pre-menopause	Peri-Menopause	Post-Menopause	
91	51	131	273
0	4	13	17
91	55	144	280

Table: Frequency distribution of menstrual screening among pre, peri and post menopausal women

Menopause status	Screening		
	Screened	Not Screened	Total
Pre-menopause	12	79	91
Peri Menopause	5	46	51
Post Menopause	17	114	131

Table: Frequency distribution of current menstrual of cervical, uterine cancer among pre, peri and post menopausal women

	Current Menstrual Status			Total
	Pre-menopause	Peri Menopause	Post Menopause	
Cervix	91	51	131	273
Uterine	0	4	13	17
Total	91	55	144	280

Table: Frequency distribution of treatment among pre, peri and post menopausal women

Treatment	Proper Treatment	Not Treated Properly	Total
Pre-menopause	26	65	91
Peri Menopause	17	34	51
Post Menopause	68	63	131

4.Major Hypothesis

- H_{01} :There is no significant difference of early screening on cancer occurrence
- H_{02} : there is no significant difference of early diagnosis on cancer occurrence
- H_{03} : There is no significant difference of treatment strategy on cancer occurrence.

Table: ANOVA test of hypothesis

		df	F	Sig.
Early Screening	Between Groups	2	5.434	.004
	Within Groups	447		
	Total	449		
Early Diagnosis	Between Groups	2	2.235	.108
	Within Groups	447		
	Total	449		
Proper and adequate Treatment	Between Groups	2	151.020	.000
	Within Groups	447		
	Total	449		

5.Result

There is evidence that uterine and cervical cancer incidence and mortality was associated with effective screening, diagnosis and treatment strategies .Post menopausal stage was associated with a 31 % reduction in uterine cancer mortality and 36% reduction in uterine cancer mortality in peri menopausal stage with effective screening, diagnosis and treatment strategies.

To significantly reduce the uterine and cervical cancer incidence and mortality, menopausal screening should be firmly intensified to improve long term effectiveness. Quality assessment of early screening, proper diagnosis and early treatment of menopausal women should be done via early indicators with special emphasis on physiological similarities of cervical cancer and peri menopausal stage.

6.Acknowledgement

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