

## Effect of Radiation on Sexual Activity of Patients of Carcinoma Cervix

\*Dr.G. Durgaprasad, Thokala Sivaiah

Associate Professor of Radio therapy, Government Medical College, Anantapuramu, First Author

Associate Professor of Community Medicine, Government Medical College, Anantapuramu

Corresponding author: \*Dr.G. Durgaprasad

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### Abstract:

**Background:** As the sexual activity of patients of carcinoma uterine cervix is effected by radiation treatment which may further ameliorate their later life by disturbing family sexual life. So it is important to study the effect of radiation on sexual life of these patients so as to take precautionary, preventive and rehabilitative measures to improve the afterlife of patients of carcinoma cervix treated with radiation.

**Objectives:** 1. To identify the socio - demographic and disease profiles of the study subjects. 2. To know the effect of radiation on the sexual activity of study subjects.

**Study design:** It is an observational study.

**Study Area:** Department of Radiotherapy Government General Hospital, Government medical college, Anantapuramu.

**Study Subjects:** Patients of Carcinoma Uterine Cervix treated with radiation.

**Sample Size:** 256.

**Study Period:** 01-06-2015 to 30-06-2016.

**Results:** It is observed that maximum 67.96% of study group belongs to middle age (31-50 years) with the mean 38.6 years. And related to sexual desire significantly maximum 71% of the study group belongs to 41 years and above age did not have quite a bit & very much desire compared 20.28 % belongs to 21-40 years of age group. And also with reference to overall sexual satisfaction about 33.36% of study group belongs to 41 & above years of age revealed that they did not have quite a bit and very much sexual satisfaction as against 56.77% belongs to 21-40 years of age group.

**Keywords:** Radiation, Sexual activity and Carcinoma Cervix.

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### I. Introduction

Cancer of uterine cervix is the fourth female commonest cancer in the world and the commonest cancer among females in India while over 50% of the cancers of females in Barshi (India) was cancer of cervix and also it is to say that cervical cancer is the leading cancer in rural India. Most of the patients of cancer cervix presents with stage II and III to the hospital where the treatment of choice is radical radiation with concurrent chemotherapy. Based on the 2015 statistics of Government medical college & General Hospital, Anantapuramu, cervical cancer accounts for 18.77 % of all cancers diagnosed and 26.48 % of cancers among women and also 70% of cervical cancers presents with state II and III. Survival of various stages of this cancer includes. Stage II A 75%, II B 60-65% and III A and III B 25-50%.<sup>1</sup> Sexual activity is an important dimension of quality of life of any women after treatment for cancer uterine cervix by radiation to pelvis, and concurrent chemotherapy. And this radical radiation therapy may adversely effect the sexual activity of the individuals in terms of sexual desire and satisfaction during sexual activity with partner.<sup>2,3</sup> Because of this, there would be sexual disharmony may be happened between the partners in the family. So it is important to study the effect of radiation on sexual life of these patients, so as to take precautionary, preventive and rehabilitative measures to improve the later life of patients of carcinoma cervix treated with radiation.

Those difficulties can be caused by changes in the hormonal secretion levels and removal of the reproductive organs like uterus and ovaries<sup>4</sup>. Radiotherapy may damage the vaginal tissues, nerves and blood vessels<sup>5</sup> which lead to vaginal atrophy, vaginal stenosis and loss of tissue flexibility.<sup>6</sup>

### II. Materials And Methodology

The study was conducted in the department of radiotherapy, Government General Hospital, Anantapuramu, during the period from 01-06-2015 to 30-06-2016. The selection of the study subjects were based on following the inclusion & exclusion criteria that is married, sexually active, newly diagnosed and

completed at least one year after last dose of radiation were included in the study after duly taking the informed consent.

According to the hospital senses the OP prevalence of these patients was found to be 61% % and the sample size was calculated by using the formula  $N=4PQ/L^2$  where  $P= 61\%$ (OP Prevalence), $Q=100-P$  i.e 39% and.  $L$  is allowable error in  $P$  i.e. 10% Of  $P$  corresponds to 6.1 So  $N= 256$ . And all the patients attended the hospital during the three months period (June, July and August 2015) were selected as study subjects in this study. They were interviewed by using a pretested Proforma (Questionnaire) designed on par with the standards of the EORTC sexual functioning questionnaire including information about their socio demographic profiles, sexual desire and overall sexual satisfaction etc. The collected data was analysed by using appropriate statistical techniques like percentages, proportions, measures of central tendency and chi-square test with the help of computer software. The results were discussed with comparing the findings of different authors of similar studies. The conclusions & recommendations were made after detailed study of the observations towards reaching the justification of study population.

### III. Results

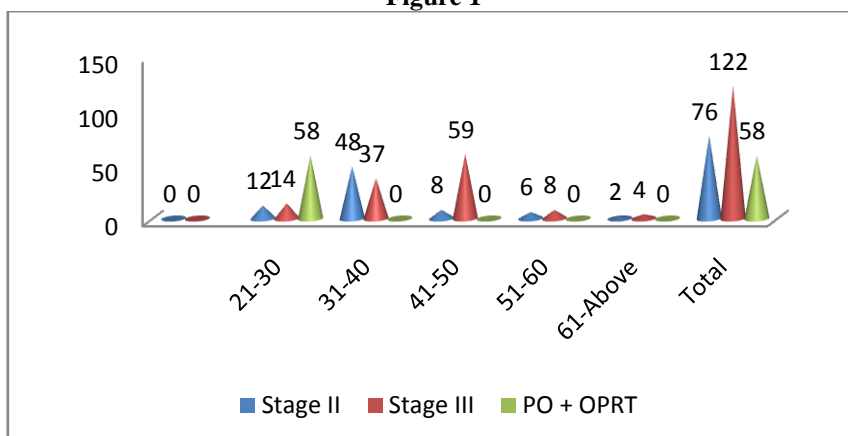
**Table – 1** Age & Stage wise distribution of study subjects

Age	Stages		POST OP RT	Total
	II	III		
21-30	12	14	30	56 (21.87%)
31-40	48	37	16	101 (39.45%)
41-50	8	59	6	73 (28.51%)
51-60	6	8	4	18 (7%)
61-Above	2	4	2	8 (3.1%)
<b>Total</b>	<b>76</b>	<b>122</b>	<b>58</b>	<b>256 (100%)</b>

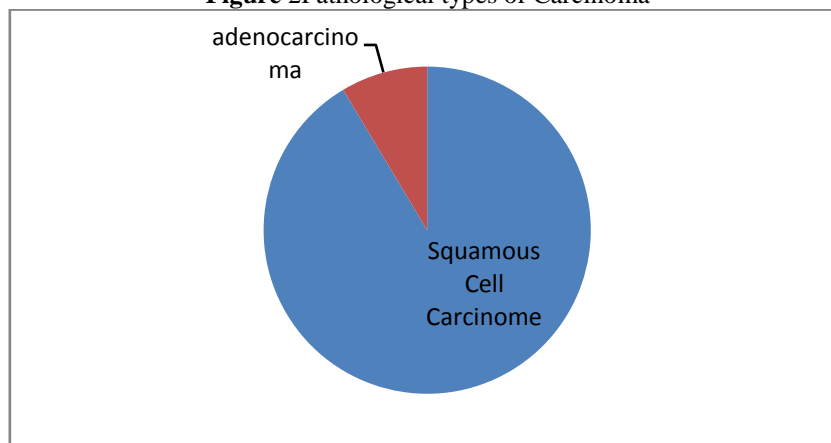
$M \pm 2SE= 38.6 \pm 0.9$

- Maximum 67.96% (174) of study subjects belongs to middle age (31-50 years).

**Figure 1**



**Figure 2** Pathological types of Carcinoma



**Table -2** Distribution of sexual desire in relation to age

P value	Desire Score	Age		Total
		21-40 N=157	41 & Above N=99	
	(No Desire) 1	5 (3.34%)	47 (47.82%)	52 (20.31%)
	Little 2	27 (16.94%)	23 (23.18%)	50 (19.53%)
<b>P&gt;0.001</b>	Quite a bit 3	47 (29.66%)	15 (15.21%)	62 (24.21%)
	Very Much 4	78 (50%)	14 (13.77%)	92 (35.93%)
<b>Total</b>		157 (100%)	99 (100%)	256 (100%)

- Related to sexual desire, significantly maximum 71% of the study group belongs to 41 and above age group did not have quite a bit & very much desire when compared to 20.28 % belongs to 21-40 years of age group.

**Table - 3 Overall** sexual satisfaction in relation to age

P Value	Sexual Satisfaction Scores	Age		Total
		21-40 N=157	41 & above N=99	
	No Satisfaction 1	39 (24.54%)	37 (37.68%)	76 (29.68%)
	Little 2	29 (18.6%)	29 (28.98%)	58 (22.65%)
<b>P&gt;0.001</b>	Quit a bit 3	32 (20.33%)	18 (18.15%)	50 (19.53%)
	Very much 4	57 (36.44%)	15 (15.21%)	72 (28.1%)
<b>Total</b>		157 (100%)	99 (100%)	256 (100%)

- And also with reference to overall sexual satisfaction about 33.36% of study group belongs to 41 & above years of age revealed that they did not have quite a bit and very much sexual satisfaction as against 56.77% belongs to 21-40 years of age group.

#### IV. Discussion

In this study related to age distribution, maximum 67.96% of study subjects belongs to middle age (31-50 years) which shows the impact of onset of sexual intercourse is too early due to higher incidence of early marriages, poverty (low socio-economic status) and poor personal hygiene etc.

Regard to sexual desire of these study subjects (survivors of cervical cancer) maximum, 71% of the study subjects belongs to 41 and above years of age group did not have quite a bit and very much desire when compared to lesser age group in the study. And these findings are in correlation with Carmark Taylor et al, 2004<sup>7</sup> study, Lai et al 2009 study<sup>8</sup> and Park et al study 2007<sup>9</sup>. This shows that apart from the effect of radiotherapy and chemotherapy, advancement of age also acting as an adjuvant to decrease the sexual desire in these cancer survivors as also pointed by Vistad et al. 2007 a<sup>10</sup>. Diminished sexual desire may lead to sexual abstinence and in extreme cases to sexual aversion ( Reis N et al. Study)<sup>11</sup> which also intensifies the sense of tension (distress) and indirectly leads to rise of psychosocial problems which effect family life as well as sexual life too (stead ML et al study)<sup>4</sup>.

It is observed that related to overall sexual satisfaction, about 33.36% of study group belongs to 41 & above years of age revealed that they did not have quite a bit and very much sexual satisfaction as against 56.77% belongs to 21-40 years of age group who have quite a bit and very much sexual satisfaction. Similar figure (41 %) was observed among the sexually active women who reported pain (or) discomfort during penetration in Bergmark et al 1999<sup>12</sup>. Stewart et al 2001<sup>13</sup>, Sekse et al<sup>14</sup> and Park et al 2007<sup>9</sup>. And 54% was observed in Ragnhild Johanne Tveit Sekse et al study<sup>15</sup>. And also similar reporting like vaginal dryness and pain during intercourse were identified in Reis N et al study<sup>11</sup>, Abbott Anderson and Kwekkeboom 2012 et al study<sup>16</sup> and sense of loss concerning sexual functioning in Stewart et al 2001 study<sup>13</sup> and Harter et al 2013 study<sup>17</sup>. Basing on the findings of several studies it is understood that sexual problems like vaginal dryness or decrease or loss of sensation concerning to sexual function and pain during intercourse, desire & overall satisfaction etc are particularly related to adjuvant radiotherapy and chemotherapy as supported by Hawighorshtknap stein et al 2004<sup>18</sup>, Korfage et.al 2009<sup>19</sup>, Lind et al 2011<sup>20</sup> and Lam merink et al 2012<sup>21</sup>.

#### V. Conclusions And Recommendations

With reference to our study results as the more than fifty percent of the long time survivors of cervical cancer reported the diminished sexual desire and lack of overall sexual satisfaction, it is recommended that the health personnel should address the issue during pre therapeutic, therapeutic and follow-up period with health education based counsellings to the couples.

Further the health care personnel should improve a greater understanding of the challenges posed by cancer patients during pre therapeutic and post therapeutic phases related to all aspects of their family and sexual life.

## References

- [1] Handbook of evidence based radiation oncology, Second Edition, Eric K Hansen, MD and Mack Roach, III, MD.
- [2] Li CC, Rew L, Chen L. Factors affecting sexual function: A comparison between women with gynaecological or rectal cancer and healthy controls. *Nurs Health Sci.* 2014;23. doi: 10.1111/nhs.12177. [PubMed] [Cross Ref]
- [3] Jensen PT. Gynecological cancer and sexual functioning: Does treatment modality have an impact? *Sexologies.* 2007;16:279-285
- [4] Stead ML, Fallowfield L, Selby P, Brown JM. Psychosexual function and impact of gynaecological cancer. *Best Pract Res Clin Obstet Gynaecol.* 2007;21:309-320.
- [5] Hughes MK. Alternations of Sexual function in women with cancer. *Semin Oncol Nurs.* 2008;24:91-101 [PubMed]
- [6] Aerts L, Enzlin P, Vergote I, et al. Sexual Psychological, and relational functioning in women after surgical treatment for vulvar malignancy: a literature review. *J Sex Med.* 2012;9:361-371[PubMed].
- [7] Carmack Taylor CL, Basen-Engquist K, Shinn EH & Bodurka DC (2004) Predictors of sexual functioning in ovarian cancer patients [Comparative Study Research Support, Non-U.S. Gov't Research Support, U.S. Gov't, P.H.S.]. *Journal of Clinical Oncology* 22, 881–889.
- [8] Lai BY, Tang C-K & Chung TH (2009) Age-specific correlates of quality of life in Chinese women with cervical cancer. *Supportive Care in Cancer* 17, 271–278
- [9] Park SY, Bae D-S, Nam JH, Park CT, Cho C-H, Lee JM, Kim SH, Park SM & Yun YH (2007) Quality of life and sexual problems in disease-free survivors of cervical cancer compared with the general population. *Cancer* 110, 2716–2725
- [10] Vistad I, Fossa SD, Kristensen GB, Mykletun A & Dahl AA (2007a) The Sexual Activity Questionnaire: psychometric properties and normative data in a Norwegian population sample. *Journal of Women's Health* (15409996) 16, 139–148.(sexual activity decreases with age)
- [11] Reis N<sup>1</sup>, Beji NK, Coskun A. *Eur J Oncol Nurs.* 2010 Apr; 14(2):137-46. doi: 10.1016/j.ejon.2009.09.004.
- [12] Bergmark K, Avall-Lundqvist E, Dickman PW, Henningsohn L & Steineck G (1999) Vaginal changes and sexuality in women with a history of cervical cancer. *New England Journal of Medicine* 340, 1383–1389.
- [13] Stewart DE, Wong F, Duff S, Melancon CH & Cheung AM (2001) "What Doesn't Kill You Makes You Stronger": an ovarian cancer survivor survey. *Gynecologic Oncology* 83, 537–542.
- [14] Sekse RJT, Raaheim M, Blaaka G & Gjengedal E (2010) Life beyond cancer: women's experiences 5 years after treatment for gynaecological cancer. *Scandinavian Journal of Caring Sciences* 24, 799–807.
- [15] Ragnhild Johanne Tveit Sekse, Karl Ove Hufthammer and Margrethe Elin Vika Sexual activity and functioning in women treated for gynaecological cancers. *Journal of Clinical Nursing* Volume 26, Issue 3-4, Version of Record online: 23 JUN 2016
- [16] Abbott-Anderson K & Kwekkeboom KL (2012) A systematic review of sexual concerns reported by gynaecological cancer survivors. *Gynaecologic Oncology* 124, 477–489.
- [17] Harter P, Schrof I, Karl LM, Hils R, Kullmann V, Traut A, Scheller H & du Bois A (2013) Sexual function, sexual activity and quality of life in women with ovarian and endometrial cancer. [Sexuelle Funktion, sexuelle Aktivität und Lebensqualität bei Frauen mit Ovarial- und Endometriumkarzinom]. *Geburtshilfe und Frauenheilkunde* 73, 428–432.
- [18] Hawighorst-Knapstein S, Fusschoeller C, Franz C, Trautmann K, Schmidt M, Pilch H, Schoenefuss G, Knapstein PG, Koelbl H, Kelleher DK & Vaupel P (2004) The impact of treatment for genital cancer on quality of life and body image—results of a prospective longitudinal 10-year study. *Gynecologic Oncology* 94, 398–403. The Sexual Activity Questionnaire: psychometric properties and normative data in a Norwegian population sample. *Journal of Women's Health* (15409996) 16, 139–148.(sexual activity decreases with age)
- [19] Korfage IJ, Essink-Bot M-L, Mols F, van de Poll-Franse L, Kruitwagen R & van Ballegooijen M (2009) Health-related quality of life in cervical cancer survivors: a population-based survey. *International Journal of Radiation Oncology Biology Physics* 73, 1501–1509.
- [20] Lind H, Waldenstrom AC, Dunberger G, Al-Abany M, Alevronta E, Johansson KA, Olsson C, Nyberg T, Wilderfang U, Steineck G & Avall-Lundqvist E (2011) Late symptoms in long-term gynaecological cancer survivors after radiation therapy: a population-based cohort study. *British Journal of Cancer* 105, 737–745.
- [21] Lammerink EAG, de Bock GH, Pras E, Reyners AKL & Mourits MJE (2012) Sexual functioning of cervical cancer survivors: a review with a female perspective. *Maturitas* 72, 296–304.

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