



Using a New Vaginal Dose Evaluation System to Assess the Vaginal Dose Effect Relationship for Vaginal Stenosis after Definitive Radiotherapy in Carcinoma Cervix

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BACKGROUND:THE STUDY AIMS TO INVESTIGATE IF A RELATIONSHIP EXISTS BETWEEN VAGINAL DOSE AND VAGINAL STENOSIS USING POSTERIOR INFERIOR BORDER OF SYMPHYSIS PUBIS POINTS(PIBS) AND INTERNATIONAL COMMISSION ON RADIATION UNITS RECTUM (ICRU-R) POINT EVALUATION SYSTEM FOR DEFINITIVE RADIOTHERAPY IN CARCINOMA CERVIX

AIMS AND OBJECTIVES: TO EVALUATE THE DOSE EFFECT RELATIONSHIP BETWEEN VAGINAL DOSE POINTS AND VAGINAL STENOSIS IN PATIENTS TREATED WITH DEFINITIVE RADIOTHERAPY AND BRACHYTHERAPY FOR CARCINOMA CERVIX .THIS CAN HELP IN PREDICTING VAGINAL STENOSIS OFTEN LEADING TO SEXUAL DYSFUNCTION THATCAN BE REDUCED IN POST TREATMENT OF WOMEN TREATED FOR CARCINOMA CERVIX

MATERIALS AND METHODS:THIS IS RETROSPECTIVE SINGLE INSTITUTIONAL STUDY FROM JANAUARY, 2019 TO JANAUARY, 2022 INCLUDED 352 PATIENTS INCLUDED HAD HISTOLOGICALLY PROVEN CARCINOMA CERVIX TREATED WITH DEFINITIVE INTENT WITH RADIOTHERAPY 45-50 Gy WITH 1.8-2Gy PER FRACTION WITH3DCRT/IMRT TECHNIQUE ONCE DAILY ,5 DAYS IN A WEEK ANDWITH WEEKLY INJ.CISPLATIN 40MG/M²AND 21-24Gy WITH6-7Gy PER FRACTION WEEKLY WITH BRACHYTHERAPY AFTER COMPLETION OF EBRT.DOSES WERE REPORTED IN TOTAL EBRT AND BT EQD2 DOSE USING LINEAR QUADRATIC MODEL WITH HALF REPAIR TIMES OF 1.5 HOURS AND α/β RATIO OF 3Gy FOR OAR.DOSES CALUCULATED AT POSTERIOR INFERIOR

PUBIC SYMPHYSIS POINTS(PIBS,PIBS+2CM,PIBS-2CM) ,RECTO VAGINAL REFERENCE POINTS(RV-RP)AND VAGINAL REFERENCE LENGTH(VRL) WAS EVALUATED.GRADING OF VAGINAL STENOSIS(VS) DONE DURING BASELINE AND FOLLOW UP WITH CLINICAL EXAMINATION AND PATIENTS ARE ENCOURAGED FOR REGULAR INTERCOURSE .IMPACT OF DOSE TO THE VAGINAL DOSE POINTS AND VRL,AGE OF THE PATIENT,VAGINAL INVOLVEMENT DURING BASELINE ON VAGINAL STENOSIS GRADE>2 EVALUATED WITH COX PROPRORTIONAL HAZARD REGRESSION MODEL.

RESULTS:352 PATIENTS INCLUDED WITH MEDIAN AGE OF 49 YEARS AND MEDIAN FOLLOW UP OF 6 MONTHS.DURING FOLLOW UP THE INCIDENCE OF G0,G1,G2,G3 VAGINAL STENOSIS WAS 25%,52%,20%,3% RESPECTIVELY.MEDIAN TOTAL DOSE TO PIBS+2CM,PIBS,PIBS-2CM,RV-RP WAS 51Gy,41.2Gy,4.1Gy ,62.2Gy EQD2 RESPECTIVELY.HIGHER DOSES TO PUBIC SYMPHYSIS POINTS ASSOCIATED WITH INCREASED RISK OF VAGINAL STENOSIS G>2.VAGINAL STENOSIS>2 WAS 69.2% WITH VRL<4.6CM WHILE 30.3% WITH VRL >4.6CM.OTHER RISK FACTORS ARE VAGINAL INVOLVEMENT AT DIAGNOSIS,HIGHR AGE.



CONCLUSION: DOSE LEVELS OF <50Gy FOR PIBS EBRT+BT AND <5Gy FOR PIBS-2CM EBRT ASSOCIATED WITH LOWER RISK OF VAGINAL STENOSIS. PHYSICIANS ALSO SHOULD PAY ATTENTION TO VAGINAL STENOSIS WHEN VRL OF PATIENT IS <4.6CM