Radical chemoradiotherapy for cervical cancer: current practice and avenues for future investment

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Purpose

A review of current practice in our institution with the view to informing future investment in resources.

Materials and Methods

A retrospective review of 79 consecutive women treated with external beam radiotherapy (50.4 Gy in 28 fractions) and high dose rate brachytherapy (21 Gy in 3 fractions) for cervical cancer between November 2017 and November 2019 was performed. Brachytherapy dose was prescribed to Point A (2 cm above and lateral to the cervical os, perpendicular to the uterine axis). D2cc (minimum dose to the most exposed 2 cm^3, $\alpha/\beta = 3$) dose constraints were 75 $Gy_{EQD2,}$ to bowel and rectum and 90 Gy_{EQD2} to bladder.[1,2]

Results

Mean age was 47 years (range 24-78 years). More than half of patients had FIGO stage IIB (n=28; 35.4%) or FIGO stage IIIC1 (n=23; 29.1%) disease. Nine patients experienced grade 3 or higher bowel toxicity, of whom the mean cumulative (EBRT plus brachytherapy) minimum biologically equivalent dose in 2 Gy fractions to the most irradiated 2cc (EQD2 D2cc) of bowel was ≥ 65 Gy for seven patients.

Sixteen patients (20.3%) developed local and/or distant disease recurrence, three of whom had parametrial involvement (FIGO stage IIB), and the remainder who had locally advanced disease of at least stage IIIB.

Results

Mean HRCTV D90 (the minimum dose covering 90% of the high risk clinical target volume) for those patients who developed a recurrence was lower at 84.6 Gy (standard deviation (SD) 12.1 Gy) than the mean HRCTV D90 of 96.5 Gy (SD 14.5 Gy) for those patients who did not develop a recurrence.

At two years, overall survival was 88% and disease-free survival was 78% (Fig. 1).

Conclusion

Outcomes in our institution were comparable with published studies.

The addition of interstitial brachytherapy to our practice may improve outcomes for patients with locally advanced, bulky disease.[3]

In vivo dosimetry would be useful to monitor radiation dose and radioactive source location in real-time during brachytherapy given the potential for movement of the target and organs at risk.[4]

References

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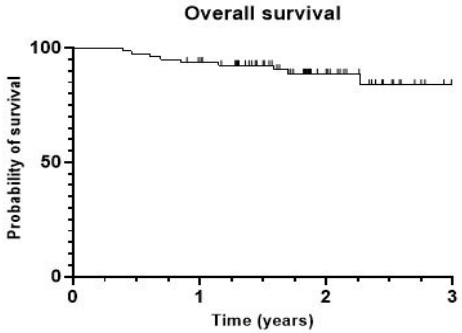

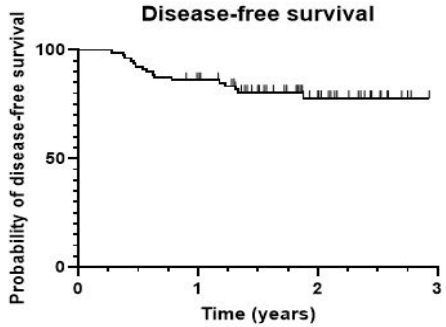

Fig. 1. Kaplan-Meier curves demonstrating overall survival and disease-free survival

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