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Original article

AN AUDIT OF THE CLINICAL PROFILE AND OUTCOMES OF CERVICAL CANCER: A RETROSPECTIVE ANALYSIS.

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Abstract

Background
Cervical cancer is the major urogenital cancer among women in India. This audit is done to analyze the treatment protocol at the tertiary cancer centre and identify the scope for improvement in this protocol.

Methods
This audit is the retrospective analysis of the reports of 500 cervical cancer patients. The data from the reports, such as the treatment given, diagnosis, prognosis, toxicities, and survival rates, were critically analyzed and subjected to statistical analysis.

Results
167 patients received only radiation therapy. The majority of the patients (333) received radiation as well as chemotherapy. 162 patients were given cisplatin every week. 98 patients were given carboplatin every week. Most of the patients, 486 out of 500, received brachytherapy; 14 of them didn't receive brachytherapy due to metastasis of the cancer. 337 patients underwent treatment for more than 8 weeks, and 163 patients received treatment for less than 8 weeks. The survival rates were better in patients with both radiation therapy and chemotherapy, particularly in patients with cisplatin.

Conclusion
The factors contributing to the overall survival rate of cervical cancer patients chemoradiotherapy and brachytherapy were determined in this study.

Recommendation
To improve the overall survival rate, a protocol for regular follow-up and documentation of the detailed clinical profile of cervical cancer patients is required.

Keywords: *Cervical Cancer, Treatment Protocol, Survival Rate*
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Introduction
The rates of cervical cancer have been exponentially increasing in developing countries such as India [1]. Lack of screening and sufficient healthcare facilities in rural areas make it difficult to diagnose cervical cancer. The death toll due to cervical cancer among women is increasing year by year. Generally, chemoradiotherapy is used to treat cervical cancer, but the stage of detection influences the survival rates [2, 3]. Most cervical cancer detected at the later stage has only up to 20% of the survival rate [4]. Whereas if cervical cancer is detected earlier, it has substantially higher rates of survival.

Malignancy of the cervical region metastasizes to the local region such as the urethra, rectum, and uterus. Later stages of cervical cancer have shown metastasis in the bones and blood as well [5]. Early detection and treatment protocols can prevent the prognosis of cervical cancer. There are advances in chemoradiotherapy that have helped reduce toxicity and improve the efficacy of the treatment [6]. Earlier detection of cervical cancer is possible if the screening is done at regular intervals at healthcare facilities. Diagnosis at an earlier stage can reduce the requirement for chemoradiotherapy, and hence the toxicity due to these radiations can be prevented [7]. Earlier detection can improve the overall survival rate and the quality of life of the patient.

It is necessary to take proactive steps in determining the protocol for the treatment of cervical cancer to get optimum

outcomes. In this study, an audit is carried out at the IGIMS, Patna and DMCH, Darbhanga to understand the clinical profile of the patients with cervical cancer and critically analyze the protocol for the treatment of cervical cancer. The objective of this study is to understand the current treatment methodology and identify the gaps for future treatment of cervical cancer. Suggestions for future treatment can be derived from the study, which ensures favourable outcomes and a better survival rate.

Materials and Methods

Study design
This was a retrospective analysis carried out on the patients diagnosed with cervical cancer.

Study setting
The study was conducted at IGIMS Sheikhpura, Patna and DMCH, Darbhanga. The medical records of the patients diagnosed with cervical cancer were collected from October 2020 to October 2023. The patients were treated with chemoradiotherapy. The chemotherapy included either cisplatin or carboplatin, as prescribed by the oncologist.

Participants
A total of 500 individuals participated in the study.

Inclusion criteria
Patients who were diagnosed with cervical cancer based on the examination done clinically, histopathological reports, proctoscopy, cystoscopy, and sonography reports of the abdomen and pelvis were included in the study.

Exclusion criteria
Patients who had undergone a surgical procedure for the removal of the tumour or had metastatic cancer were eliminated from the study.

Bias
There was a chance that bias would arise when the study first started, but we avoided it by giving all participants the identical information and hiding the group allocation from the nurses who collected the data.

Ethical consideration
The institutional review board gave clearance for this study.

Data Collection and Analysis
The patients received 40 to 50.4 units of radiation divided into 1.8 to 2 units in each fraction with either two-dimensional or three-dimensional telecobalt. Radiation was applied to the 4th and 5th lumbar vertebrae. A CT scan was taken to determine the tumour volume and the planned tumour volume (which was to be targeted by radiation). Most of the patients received brachytherapy of 25 to 30 units in fractionation. The toxicities reported and the survival rates were analyzed from the reports.

Statistical analysis
The data obtained was arranged on a Microsoft Excel sheet and then subjected to statistical analysis using statistical software for social sciences.

Results
In total, 500 reports were reviewed. The age range of the patients was 18-85 years, and most of them belonged to either the 2nd or 3rd stage of cancer. Table no. 1 demonstrates the disease characteristics.

Table 1: Disease characteristics

	Percentage (%)
Stage	
I	2.18
II	33.96
III	60.11
IV	1.53
Histology	
Squamous cell carcinoma	92.46
Adenocarcinoma	3.51
Poorly differentiated neoplasm	1.86
Others	0.22

Table No. 2 illustrates the treatment received by the patients at the facility. 167 patients received only radiation therapy. The majority of the patients, 333, received radiation as well as chemotherapy. The dose and drug of the chemotherapy were prescribed according to the oncologist's discretion. 162 patients were given cisplatin every week. 98 patients were given carboplatin every week. Most of the patients, 486 out of 500, received brachytherapy; 14 of them didn't receive brachytherapy due to metastasis of the cancer. 337 patients

underwent treatment for more than 8 weeks, and 163 patients received treatment for less than 8 weeks
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Table no. 2: Treatment received by the patients

Treatment received	Frequency
Only radiation	167
Radiation with chemotherapy	333
Every week cisplatin	162
Every week carboplatin	98
Cisplatin in 3 weeks	74
Brachytherapy	486
Treatment for more than 8 weeks	337
Treatment for less than 8 weeks	163

The overall survival rate that is survival for 6 years after the diagnosis was 37%. Patients with both chemo and radiation therapy had a higher survival rate than the patients who received only radiation therapy. On average they had 8 months of more life expectancy and the difference in the survival rates was found to be statistically significant, the p-value was 0.035. On the contrary, the patients with less than 8 weeks of treatment had a higher survival rate compared to the patients with more than 8 weeks of treatment but the difference was not statistically significant, the p-value was 0.149.

Patients with cervical cancer in 1st and 2nd stages had higher survival rates compared to 3rd and 4th stages. Toxicities were comparatively higher in the patients who received chemotherapy, especially blood-related toxicities. Dermal toxicities and gastrointestinal toxicities were common irrespective of the treatment received.

Discussion

In this study, all patients underwent radiation therapy, with the majority of them receiving chemoradiotherapy. It was observed that the overall survival rates were higher among patients who received chemoradiotherapy, consistent with previous studies [8, 9]. Additionally, brachytherapy was administered to most patients, contributing significantly to the overall survival rate.

Previous research has emphasized the importance of encouraging patients to undergo chemotherapy, as it has a substantial impact on overall survival rates [10]. This audit yielded similar findings, highlighting the positive effect of chemotherapy on survival outcomes. Among the patients who received chemotherapy, those on a weekly cisplatin regimen exhibited a higher survival rate compared to other regimens. Cisplatin has been recognized for its effectiveness in the treatment of cervical cancer [11]. Although toxicities due to chemotherapy were expected, they were manageable. However, the audit revealed significant gaps in medical records. Critical information regarding treatment and survival rates was lacking, and the reasons for non-consent to chemotherapy were not mentioned in any of the reports. Furthermore, details on the prognosis and treatment of toxicities were absent, likely because many patients did not follow up after treatment, and the reasons for this lost follow-up were not documented.

It is worth noting that while previous studies have reported survival rates ranging from 40% to 50%, this audit found lower survival rates [12, 13]. This disparity may be attributed to inadequate data maintenance, particularly due to the high rate of lost follow-up. Additionally, the absence of documentation of comorbidities in cervical cancer patients in the reports may have influenced the observed survival rates.

Generalizing these findings to other settings underscores the importance of comprehensive data collection and follow-up in cervical cancer treatment. Encouraging patients to undergo chemotherapy, particularly regimens like weekly cisplatin, may lead to improved survival outcomes. However, addressing issues related to follow-up and documentation is crucial for obtaining accurate and reliable survival rate data in cervical cancer patients across different healthcare settings.

Conclusion

This audit helped in analyzing the treatment protocol for cervical cancer at our institute. The pitfall identified in this treatment was a lack of documentation and follow–ups. However, the factors contributing to the overall survival rate such as chemoradiotherapy and brachytherapy were determined in this study. This audit also aided in the development of an improved protocol to increase the survival rate of cervical cancer patients.

Limitations

The patients in this study did not follow-up regularly. Hence, the prognosis of the toxicities and the survival rate could not be determined. The study showed that documentation of the details is required to understand its contribution towards the overall survival rate.

Recommendations

To improve the overall survival, rate a protocol for regular follow-up and documentation of the detailed clinical profile of the cervical cancer patients is required.

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List of abbreviation

CT- computed tomography
DMCH- Darbhanga Medical College Hospital
IGIMS- Indira Gandhi Institute of Medical Sciences

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Conflict of interest: No conflict of interest was declared by the author.

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