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Research Article

**DETERMINE THE DEGREE OF AGREEMENT BETWEEN MRI
AND HISTOPATHOLOGY IN T STAGING OF CERVICAL
CARCINOMA**Dr. Kinza Batool¹, Dr. Iram Asghar², Dr. Muhammad Zain Ul Abideen Roy³

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Abstract:

Introduction: Cervical cancer is a common disease with significant mortality and morbidity. **Objectives:** The main objective of the study is to analyse the degree of agreement between MRI and histopathology in T staging of cervical carcinoma.

Material and methods: This descriptive study was conducted in Health Department Punjab during 2019. Sample size of 100 cases was calculated with 95% confidence level, 8% margin of error and taking expected percentage of agreement i.e 80.9% between MRI and histopathology for T-staging of cervical carcinoma. Informed consent was taken from the patients.

Results: The data was collected from 100 patients. The mean age of the patients was 46.45 ± 13.38 years with minimum and maximum ages of 25 & 70 years respectively. In this study the MRI report diagnosed stage T-1 in 32(32%) patients, T-2 stage was diagnosed in 24(24%) patients, T-3 stage diagnosed in 18(18%) patients and T-4 stage diagnosed by MRI in 26(26%) patients.

Conclusion: It is concluded that MRI had good agreement with histopathology in T staging of cervical carcinoma.

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INTRODUCTION:

Cervical cancer is a common disease with significant mortality and morbidity. Accurate preoperative staging is the most important factor in determining appropriate management of cervical cancer because the therapeutic method chosen and prognosis depend on clinical findings and radiologic stage at presentation. Various diagnostic methods including bimanual examination with the patient anesthetized, biopsy, computed tomography and magnetic resonance imaging are being used for preoperative staging of cervical carcinoma [1].

Cervical cancer is a cancer arising from the cervix. It is due to the abnormal growth of cells that have the ability to invade or spread to other parts of the body. Early on, typically no symptoms are seen. Later symptoms may include abnormal vaginal bleeding, pelvic pain, or pain during sexual intercourse. While bleeding after sex may not be serious, it may also indicate the presence of cervical cancer [2].

Human papillomavirus (HPV) infection appears to be involved in the development of more than 90% of cases, most people who have had HPV infections, however, do not develop cervical cancer [3]. Other risk factors include smoking, a weak immune system, birth control pills, starting sex at a young age, and having many sexual partners, but these are less important. Cervical cancer typically develops from precancerous changes over 10 to 20 years. About 90% of cervical cancer cases are squamous cell carcinomas, 10% are adenocarcinoma, and a small number are other types. Diagnosis is typically by cervical screening followed by a biopsy. Medical imaging is then done to determine whether or not the cancer has spread [4].

Objectives:

The main objective of the study is to analyse the degree of agreement between MRI and histopathology in T staging of cervical carcinoma.

MATERIAL AND METHODS:

This descriptive study was conducted in Health Department Punjab during 2019. Sample size of 100 cases was calculated with 95% confidence level, 8% margin of error and taking expected percentage of agreement i.e 80.9% between MRI and histopathology for T-staging of cervical carcinoma. Informed consent was taken from the patients. The demographic information like name, age and address was obtained. MRI of the pelvis performed using a 1.5 tesla MRT 1580 scanner (Toshiba Excerlart Vantage). A compliant cervical cancer imaging protocol included T1, T2 weighted, FAT SAT and contrast enhanced sequences in the sagittal, axial and coronal planes. All the results were interpreted by our senior radiologist and T-stage was noted according to MRI findings. All histopathological examinations performed by a single histopathologist. Both MRI and histopathology were separately place the patients in one of the T-stage of the disease using TNM staging system for cervical carcinoma. All information was collected through specially designed performa.

Data was entered and analyzed by using SPSS software version 14. Continuous variable like age was presented as mean \pm standard deviation.

RESULTS:

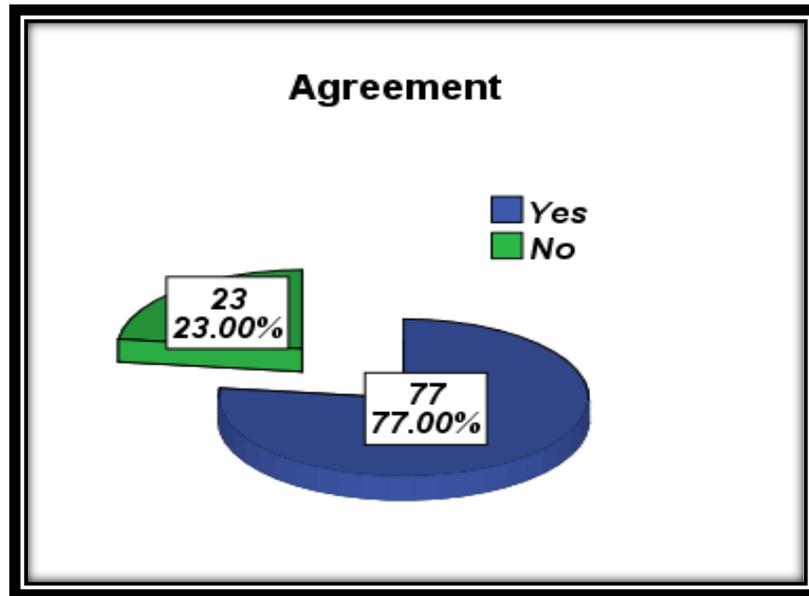
The data was collected from 100 patients. The mean age of the patients was 46.45 ± 13.38 years with minimum and maximum ages of 25 & 70 years respectively. In this study the MRI report diagnosed stage T-1 in 32(32%) patients, T-2 stage was diagnosed in 24(24%) patients, T-3 stage diagnosed in 18(18%) patients and T-4 stage diagnosed by MRI in 26(26%) patients. Out of 100 patients the agreement between the MRI and histopathology was found in 77(77%) patients and it was not found in 23(23%) patients.

Table 01: Frequency distribution of outcome of MRI

MRI	Frequency		Percent	
	T-1	T-2	T-3	T-4
	32	24	18	26
	100	100	100.0	100.0

Table 02: Frequency distribution of outcome of histopathology

Histopathology	Frequency		Percent	
	T-1	T-2	T-3	T-4
	26	24	27	23
	26.0	24.0	27.0	23.0
Total	100	100.0	100.0	100.0

**Fig 01:** Frequency distribution of agreement between MRI and Histopathology**DISCUSSION:**

Cervical cancer is the third most common malignancy in women worldwide. Accurate staging of the disease is crucial in planning the optimal treatment strategy. Carcinoma of the cervix is a major cause of death, especially in Third World countries, where Pap smear screening is often not routinely performed [5]. Important prognostic factors include volume and histological grade of tumor. Magnetic resonance imaging (MRI) is widely accepted in the preoperative assessment of patients with cervical carcinoma to optimize the therapeutic strategy [6,7].

In our study the agreement between the MRI and histopathology was found in 77(77%) patients. In this study by applying Kappa statistics a good agreement was observed between the MRI and histopathology. i.e Kappa statistics=0.694 [8,9]. MRI is the preferred imaging modality for evaluating local extent of cervical cancer due to its high contrast resolution which enables differentiation between cancerous and normal tissues. MRI is safe with high sensitivity (86%-91%) and specificity (94%-96%) values for evaluating tumor extension to the corpus uteri [10].

CONCLUSION:

It is concluded that MRI had good agreement with histopathology in T staging of cervical carcinoma.

REFERENCES:

1. Yamashita H, Niibe Y, Okuma K, Omori M, Inoue Y, Onda T, et al. Treatment results for Stage Ib cervical cancer after stage subdivision by MRI evaluation. *European journal of gynaecological oncology* 2013;35(5):499-502.
2. Shirazi AS, Razi T, Cheraghi F, Rahim F, Ehsani S, Davoodi M. Diagnostic accuracy of magnetic resonance imaging versus clinical staging in cervical cancer. *Asian Pac J Cancer Prev* 2014;15(14):5729-32.
3. Demirbaş T, Cimilli T, Bayramoğlu S, Güner NT, Hocaoğlu E, İnci E. Contribution of diffusion-weighted imaging to diagnosis and staging of cervical cancer. *Balkan medical journal* 2014;2014(2).
4. Dhanda S, Thakur M, Kerkar R, Jagmohan P. Diffusion-weighted imaging of gynecologic tumors: diagnostic pearls and potential pitfalls. *Radiographics* 2014;34(5):1393-416.

5. Schreuder SM, Lensing R, Stoker J, Bipat S. Monitoring treatment response in patients undergoing chemoradiotherapy for locally advanced uterine cervical cancer by additional diffusion-weighted imaging: A systematic review. *Journal of Magnetic Resonance Imaging* 2015;42(3):572-94.
6. Prasad T, Thulkar S, Hari S, Sharma D, Kumar S. Role of computed tomography (CT) scan in staging of cervical carcinoma. *The Indian journal of medical research* 2014;139(5):714.
7. Tarney CM, Han J. Postcoital bleeding: a review on etiology, diagnosis, and management. *Obstetrics and gynecology international* 2014;2014.
8. Kumar V, Abbas AK, Fausto N, Mitchell RN. *Robbins basic pathology*. 2007. Saunders Elsevier 2003:718-21.
9. Hong WK, Holland JF. *Holland-Frei Cancer Medicine 8: PMPH-USA*; 2010.
10. Dunne EF, Park IU. HPV and HPV-associated diseases. *Infectious disease clinics of North America* 2013;27(4):765-78.