

## An Observational Study to Correlate the Clinical Diagnosis with Histopathologic Findings

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Conflict of interest: Nil

### Abstract

**Aim:** The aim of the present study was to correlate the clinical diagnosis with histopathologic findings.

**Methods:** This study was conducted in the Department of Skin & V. D, Nalanda Medical College & Hospital, Patna, Bihar, India from November 2020 to October 2021. 50 patients were included in the study.

**Results:** Of the 50 patients, 14 were males (28%) and females were 36 (72%), with an age range between 7 to 69 years and a mean (SD) of 35.5 years±16.8. Skin biopsies were taken from the lower extremities (40%), upper limbs (26%), trunk (18%) and head (6%) and other sites (10%). Most patients had a single clinical diagnosis which matched the histopathologic diagnosis.

**Conclusion:** Dermatologists often exceedingly rely on histopathological examination of the skin for diagnostic purposes. As discussed in our study, providing a comprehensive clinical description increases the diagnostic accuracy rate. Repeat biopsy may be useful in certain cases to arrive at an accurate and definite diagnosis.

**Keywords:** Clinicopathologic correlation; skin diseases; clinical history

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### Introduction

Dermatology unlike other disciplines depends on extremely few studies to validate the diagnosis, among which skin biopsy plays a vital part. [1] Skin biopsy is a well-established method that aids in diagnosing as well as prognosticating the illness. [2] Thus, enhancing the diagnostic yield of skin biopsy is of highest significance. The correlation between the clinical and pathological diagnosis varies from 67 to 87% as reported by many research, thus implying that it is impacted by several aspects like the definition of concordance and availability of clinical data to the pathologist. [3] Skin biopsy is a vital and necessary tool that is regularly applied in the therapy of skin problems. Numerous variables are known to impact the clinico-pathological consistency such as the quality of clinical information provided by the dermatologists in the histopathology requisition forms, the representative lesion chosen for biopsy, choice of biopsy technique as well as usage of ancillary tools such as special stains and immunofluorescence wherever deemed necessary. [1,4] Skin biopsy is one of the most essential

diagnostic techniques used in dermatological practice. [5] There are several elements that might impact the result of a biopsy. The information reported on the histopathology request form is a key data set submitted by the treating dermatologist to the reporting pathologist. Pathologists depend upon clinical information supplied to interpret the histopathology results. Similarly, a good biopsy report is crucial for the doctor to arrive at a diagnosis. [6] Many prior research on clinicopathological consistency have revealed that dermatologists have a considerably greater percentage of clinical diagnostic accuracy compared to other disciplines. [7-9]

The objective of this research was to establish a relationship between the clinical diagnosis and histopathologic results, while identifying variables that may influence this association, such as the patient's clinical history and differential diagnosis.

### Materials and Methods

This study was conducted in the Department of Skin & V. D, Nalanda Medical College & Hospital,

Patna, Bihar, India from November 2020 to October 2021. 50 patients were included in the study.

Data collection was by convenience sampling from suitable clinical notes and results of skin biopsies of patients seen at the Out-Patient Clinic from November 2020 to October 2021. Incomplete patient clinical or histopathologic recording was an exclusion criterion, missing data like clinical symptoms and diagnosis rendered them excluded.

The patient's name, age, gender, folder number, clinical diagnosis, histology report, and histopathologic diagnosis were gathered and

recorded on an excel sheet. The findings were considered to be correlated when the provisional clinical diagnosis or any of the differential diagnoses matched the histopathologic diagnosis. Conversely, the results were considered to be discordant when the preliminary clinical diagnostic or differential diagnoses differed from the histopathologic diagnosis. The data were analysed using IBM SPSS software.

## Results

**Table 1: Demographic data**

Gender	N	%
Male	14	28
Female	36	72
<b>Skin biopsies</b>		
Lower extremities	20	40
Upper limbs	13	26
Trunk	9	18
Head	3	6
Others	5	10

Out of the total of 50 patients, 14 were male, accounting for 28% of the sample, while the remaining 36 were female, making up 72% of the sample. The age of the patients ranged from 7 to 69 years, with an average age of 35.5 years and a standard deviation of 16.8 years. Biopsies of the skin were obtained from the lower extremities (40%), upper limbs (26%), trunk (18%), head (6%), and other locations (10%). The majority of individuals had a solitary clinical diagnosis that corresponded to the histopathologic diagnosis.

## Discussion

In the Global Burden of Disease survey in 2013, skin illnesses were found to be the 18th biggest cause of disability-adjusted life years (DALYs) globally, making them the fourth leading cause of impairment worldwide. [10] Humans may be affected by several skin problems. It is crucial to have a thorough understanding of skin illnesses, since many skin ailments have similar presentations. Therefore, a comprehensive evaluation of the lesion's history and physical examination is essential for making an accurate diagnosis. [11,12]

Out of the total of 50 patients, 14 were males, accounting for 28% of the sample, while the remaining 36 were females, making up 72% of the sample. The age of the patients ranged from 7 to 69 years, with an average age of 35.5 years and a standard deviation of 16.8 years. Biopsies of the skin were obtained from the lower extremities (40%), upper limbs (26%), trunk (18%), head (6%), and other locations (10%). The majority of individuals

had a solitary clinical diagnosis that corresponded to the histopathologic diagnosis. Previous research on clinicopathological consistency has consistently emphasised the need of providing sufficient clinical information to the pathologist. Aslan et al [13] found that there was a significant reduction in the rate of agreement between clinicopathological findings when biopsy specimens were re-evaluated without considering the clinical diagnosis. In a study conducted by Rajaratnam et al [14], it was shown that pathologists achieved a correct diagnosis in 55% of instances when they were unaware of the clinical features of the patients. However, when they were given the necessary clinical information, the accuracy of their diagnoses jumped to 78%. Rademaker and Thornburg<sup>6</sup> evaluated the accuracy of clinical information included in biopsy request forms and found that more than one-third of the forms lacked adequate clinical information. Research examining the impact of evaluating clinical photographs on the histopathologic diagnosis of inflammatory skin illnesses found that when pathologists assessed the clinical pictures, it improved the diagnostic accuracy by 16.6%. [15] However, Balasubramanian et al [16] found no significant correlation between the diagnostic result and the sufficiency of the clinical information presented.

In research conducted in 2018 by Seema Umarji et al [17], the pathology reports of skin biopsy specimens from 455 people with inflammatory skin disease showed a correlation of 98%. The pathologist found that providing a broader list of potential diagnoses was not beneficial, whereas a

precise description of the lesions assisted the pathologist. A more recent study conducted in Iraq in 2019 reported a clinicopathologic consistency rate of 62% and an inconsistency rate of 38%. The study emphasised the significance of communication between dermatologists and histopathologists and concluded that clinicopathologic correlation is superior to relying solely on clinical or histopathologic diagnosis. [18] This research was undertaken to evaluate the clinical and histological diagnoses made at our dermatological clinic and identify areas in need of improvement, since no previous investigation had been completed. The study's findings demonstrated a strong agreement between clinical and histologic diagnosis. However, it also identified areas where more improvements might be made to enhance correlation and therefore enhance patient care.

### Conclusion

Dermatologists often depend heavily on histological analysis of the skin for diagnostic reasons. As stated in our research, offering a thorough clinical depiction enhances the rate of diagnosis accuracy. Performing a repeat biopsy might be beneficial in some instances to get a precise and conclusive diagnosis.

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