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**Non-Compliance to Imatinib in Chronic Myeloid Leukaemia Patients in COVID Era- Dissecting the Causes: A Telephonic Retrospective Study**

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**Abstract**

The COVID19 pandemic affected millions of lives, especially the ones with underlying comorbidity that requires regular follow up and compliance to therapy. One third of the chronic myeloid leukaemia patients in India has impaired drug adherence and our study aimed to elucidate the reasons for non-compliance to imatinib mesylate therapy in CML patients and if COVID19 was contributing factor as well. In a hospital based telephonic retrospective study we were able to contact 32 CML patients who collected imatinib mesylate between October 2020 till March 2021. While (43.75%) patients were strictly adherent to their regimen, lockdown measures due to the pandemic was the most common cause for non-compliance (25%) followed by concurrent illness (18.75%), unavailability (12.5%), reluctance to take the drug (6.25%) and switch over to herbal medication (3.125%). This study highlights the fact that of all the reasons of non-compliance, availability or quality of the drug should not become the cause for non-compliance in a patient dedicated to adhere to their advised regimen despite of all the restrictions due to the ongoing pandemic.

**Keywords:** CML; Covid19; Imatinib Mesylate; Treatment Compliance; Lockdown

## Introduction

Chronic Myeloid Leukemia (CML) is a type of cancer caused by the formation of a fusion gene from the reciprocal translocation of chromosomes 9 and 21. Imatinib, a tyrosine kinase inhibitor, is an effective treatment for CML but adherence to the treatment is essential for complete therapeutic response [1]. Factors such as unavailability, side effects, and the COVID-19 pandemic can limit the adherence to Imatinib therapy in CML patients. This study highlights the challenges faced by CML patients in adhering to Imatinib therapy.

## Material and Methods

The study was a retrospective, telephonic, hospital-based observational study. We reviewed the chemotherapy register of Assam Medical College and Hospital and attempted to contact 59 CML patients who had taken Imatinib in the last 5 months. Out of these, 27 patients could not be reached. The remaining patients were asked about their compliance to the therapy with their consent.

## Results

The study involved 32 patients, with a median age of 48 years and a gender ratio of 34.3% female to 65% male. 43.75% of the patients were strictly adherent to their Imatinib therapy. The remaining patients reported various reasons for non-adherence, including lockdown due to the COVID-19 pandemic (25%), concurrent illness (18.75%), drug unavailability (12.5%), reluctance to take the drug (6.25%), and temporary switch to herbal medication (3.125%).

## Discussion

There are many studies on non-compliance to Imatinib in chronic myeloid leukaemia patients before COVID19. However, there are very limited studies that assessed the impact of COVID19 pandemic on compliance of Imatinib in chronic myeloid leukaemia patients.

In our study, we did not find the age and sex to be the reason for non-compliance to the drug, similar to previous studies done by Reis et al. [2] and Efficace et al. [3]. In our study, out of the 32 patients, 43.75% (14) patients were strictly adherent to the therapy which is lower than other studies done in

India. In the study done by Kapoor et al. the adherence rate was 75% [4] and in another study, by Yanamandra et al. the adherence rate was 54.95% [5].

In our study, 25% patients did not have access to the medications due to COVID19 pandemic in 2020 and was the most important reason of non-compliance. Other reasons were due to concurrent illness (18.75%), unavailability of free drug (12.5%), reluctance to take the drug (6.25%) and one patient switched to herbal medication temporarily (3.125%). Results in this study are along the lines of similar studies done in Indian setup by Menon and Yanamandra et al. where patient's literacy and financial status were important determining factors [5, 6]. In studies done abroad, mental health, lower level of social support, lower level of information, difficult access to the treating clinic, drug intolerance and poor patient involvement in treatment were the key factors for non-compliance[3, 7-9].

Our study has the limitation of smaller sample size, owing to the decreased footfall in the outpatient department due to the ongoing pandemic but it manages to highlight the impact of COVID19 on cancer care.

## Conclusion

In conclusion, this study highlights the impact of the COVID-19 pandemic on the adherence to Imatinib therapy in CML patients. The pandemic was found to be the second-most significant factor limiting adherence, after concurrent illness and followed by drug unavailability. The study emphasizes the importance of ensuring the availability, quality, and delivery of Imatinib, as well as raising awareness of CML to prevent patients from switching to alternative treatments like herbal medications.

## References

1. Eden RE, Coviello JM (2022) Chronic Myelogenous Leukemia. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing.
2. dos Reis SRC, Quixadá AT de S, Nunes ST, Cid DMC, de Souza JH, (2013) et al. Adherence to treatment with imatinib in chronic myeloid leukemia: a study of the first decade of responses obtained at a Brazilian hospital. *Rev Bras Hematol Hemoter* 35: 174-9.
3. Efficace F, Rosti G, Cottone F, Breccia M, Castagnetti F (2014) et al. Profiling chronic myeloid leukemia patients reporting intentional and unintentional non-adherence to lifelong therapy with tyrosine kinase inhibitors. *Leuk Res* 38: 294-8.
4. Kapoor J, Agrawal N, Ahmed R, Sharma SK, Gupta A (2015) Factors Influencing Adherence to Imatinib in Indian Chronic Myeloid Leukemia Patients: A Cross-Sectional Study. *Mediterr J Hematol Infect Dis* 7: e2015013.
5. Yanamandra U, Malhotra P, Sahu K k, Sushma Y, Saini N (2017) et al. Variation in Adherence Measures to Imatinib Therapy. *JGO* 4: 1-10.
6. Menon (2021) Non-adherence to CML therapy and its clinical implications in India [Internet].30: 3; 142-7.
7. Cid DMC, Magalhães SMM, Quixadá AT de S, Honório RPP, Costa PFTF (2013) et al. Chronic myeloid leukemia: an overview of the determinants of effectiveness and therapeutic response in the first decade of treatment with imatinib mesylate in a Brazilian hospital. *Rev Bras Hematol Hemoter* 35: 389-94.
8. Jönsson S, Olsson B, Söderberg J, Wadenvik H (2012) Good adherence to imatinib therapy among patients with chronic myeloid leukemia--a single-center observational study. *Ann Hematol* 91: 679-85.
9. Santoleri F, Sorice P, Lasala R, Rizzo RC, Costantini A (2013) Patient Adherence and Persistence with Imatinib, Nilotinib, Dasatinib in Clinical Practice. *PLOS ONE* 8: e56813.

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