

Case Report

I Feel (and See) My Imatinib Working – A Side Effect?

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Abstract

A previously never reported case of an unusual response to taking the chronic myeloid leukemia (CML) drug imatinib is presented. Tattoos became transiently palpable with each dose taken regardless of brand of imatinib. This did not occur with dasatinib and was not evident when the patient was off therapy. The mechanism which is still uncertain, is discussed in the context of dermatological side effects of imatinib and other CML drugs.

Keywords: CML, Imatinib, Tattoo

Introduction

I am writing to report a previously undescribed event that occurred with treatment for chronic myeloid leukemia (CML). CML is a myeloproliferative malignancy where patient outcome with the use of tyrosine kinase inhibitor (TKI) therapy, has gone from fatal without a stem cell allograft to what is now essentially a curable or chronic disease with near normal patient survival [1,2]. TKI therapy is associated with side effects/adverse events that vary with the individual drug and may help decide on the safest choice in patients with co-morbidities [3].

Case Report

A 54-year-old white male was diagnosed with asymptomatic chronic phase chronic myeloid leukemia on routine blood examination in 2006. Work up revealed classical Philadelphia chromosome and bcr: : abl1 translocation. He had no co-morbidities and his examination was unremarkable other than an abundance of tattoos of various ages and techniques. He was started on branded imatinib (Gleevec®) and achieved >MR4.5 (<0.0032%IS) by 18 months.

He had no adverse events with treatment but did have a very unusual and unique side effect. Within 30 minutes of taking the imatinib, the black components of his older tattoos became raised and palpable but not painful. This did not occur with the tattoos that were done more recently and not with any other colors. After a couple of hours, this disappeared and recurred with each dose. No changes were made. The patient declined photography but agreed to the report.

After about 6 years on therapy, he elected a treatment-free remission (TFR) attempt but failed at 4 months. As he was on a study to try a drug switch to dasatinib (Sprycel®) and see if a second TFR attempt could be successful [4]. After achieving <0.0032% log reduction for greater than a year, a second TFR attempt failed after 3 months. Interestingly, he had no recurrence of his tattoo issue

while off therapy or while on dasatinib. Since he was now going to be on tyrosine kinase inhibitor (TKI) therapy indefinitely after two failed TKI discontinuation attempts, and was off study, he elected to restart imatinib as he really had no quality of life (QoL) issues while taking it. By this time imatinib was standardly available as a generic and his reimbursement would not allow brand. He went on to generic imatinib and again obtained undetectable molecular disease. Surprise, his raised tattoos were also back, confirming some kind of relationship between imatinib and the black ink of his older tattoos.

Discussion and Conclusion

The relationship here is hard to explain. A detailed PubMed® review yield not only no similar cases with imatinib, but none with other drugs. Overlooked or unreported similar cases would be interesting. Imatinib and other TKIs are known to have effects on pigmentation – vitiligo in blacks or lightening of dark skin in South Asians, hyperpigmentation of the temporal regions in Chinese, spotting in whites [5,6]. There is a definite ethnic/racial association that is cosmetically disturbing in many cases but on occasion have been noted to be beneficial in matrimonial choice in South Asians. These changes are not uncomfortable and reverse completely on stopping the imatinib [5,6]. These changes are felt to be due to alternative pathways or targets of the therapy [7,8]. Similar findings have been seen with other oncology medications [9].

What is particularly curious about this case is that the effects are reproducibly transient, time limited and related to older tattoos and oral ingestion of imatinib. They are not progressive or damaging and did not interfere with the efficacy of imatinib. Tattoo ink can cause permanent cutaneous issues [10-13] depending on the makeup. Cutaneous issues with imatinib or TKIs in general are not repeatedly transient. Although immunological issues with imatinib are known [14], they would not come and go like this. My only conclusion is that this is a very mild inflammatory response to imatinib triggering in

old-time tattoo inks. A single newly reported side effect can generate thought [15,16]. This may help with better understanding of a process, inspire further thought and increase awareness leading to better safety and improvement in therapy not only of CML but other diseases. On some occasions this can lead to warnings in international guidelines [17]. Or more likely as one wag stated, “Cute but better discussed over cognac” [18].

Disclosure

No IRB was required. Patient consented and in fact wanted to be an author. There are no funding or conflicts to be noted.

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