

## Long-term Imatinib use causing tubulo-interstitial nephritis: a rare adverse effect

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### Introduction:

Imatinib is a tyrosine kinase inhibitor used in treatment of certain haematologic malignancies. Its most common side effects are gastrointestinal symptoms, fluid retention and a drop in haemoglobin. Renal dysfunction is very rarely reported with it. Below is a case acute tubulo-interstitial nephritis (TIN) after prolonged use of Imatinib.

### Case description:

A 72 years old gentleman was referred to the renal clinic with a declining renal function. He was clinically well on presentation. He denied any symptoms suspicious of vasculitis. There was no history of non-steroidal drugs, no history of recent antibiotic use. He was on Imatinib tablets for 20 years as prescribed by haematology for chronic myeloid leukaemia. Other significant background history included hypertension, mild chronic kidney disease (baseline creatinine 150umol/L), a bladder tumour treated in 2014 and a left nephrectomy for a renal cell carcinoma in 2018. His latest CT abdomen (post-surgery) in July 2018 did not show any active malignancy.

Examination was unremarkable apart from a blood pressure of 160/80. Bloods done in clinic showed acute kidney injury with a creatinine of 499umol/L, potassium of 5.5mmol/L. A complete immunology screen and myeloma screen was sent (which later came back to be negative), renal ultrasound done showed no obstruction and normal sized right kidney. Renal biopsy was considered but due to him having a single kidney it was decided to try a conservative approach first. As there were no other offending agents in his medication history, he was asked to stop Imatinib to see if it helps in improving renal function, and blood pressure management was optimised.

Within a few days of his initial consultation, he presented to accident and emergency with chest discomfort and vomiting. On admission, bloods revealed a significant deterioration in renal function with a creatinine of 1449umol/L and a urea of 60mmol/L. He was acidotic with bicarbonate of 4mmol/L and potassium was 7.4mmol/L. He was started on hemofiltration.

Due to the suspicion of possible interstitial nephritis, Prednisolone was started and Imatinib was kept on hold.

Kidney biopsy was done which showed active tubulo-interstitial nephritis, hence confirming the diagnosis. His renal function started recovering with the above treatment, and he came off dialysis with good urine output and much improved blood biochemistry.

### Discussion:

This is an unusual case of a drug not known to cause acute renal failure being responsible for acute tubulo-interstitial nephritis. There have been a few studies linking Imatinib to renal function decline but the cause has been unclear. Looking at this case it might be reasonable to regularly monitor renal function whilst on Imatinib and seek urgent renal advice if any derangement.

There is also not much literature on cumulative dose toxicity of Imatinib, and it might be worthwhile investigating this further.

This case provides a good insight on a poorly understood side effect of a very important drug and may form a base for further research in this domain.