

Renal function over 10 years in patients with chronic myeloid leukaemia treated with tyrosine kinase inhibitors: A single centre experience.

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AIM

To investigate whether patients with CML on long term TKI therapy have a significant decline in renal function.

INTRODUCTION

- The success of tyrosine kinase inhibitors (TKI) has revolutionised the treatment paradigm of chronic myeloid leukaemia (CML)¹.
- There is increasing experience with TKI side effects¹.
- Despite the evolving target of treatment free remission (TFR), many patients remain on TKIs long term¹.
- Long term side effects of TKIs are less well studied: There is some evidence of a gradual decline in renal function².

METHOD

- Retrospective analysis of all patients with CML treated with TKI therapy for at least 2 years within our trust.
- Data collection of estimated glomerular filtration rate (eGFR) using Modification of Diet in Renal Disease Study (MDRD) equation.
- eGFR analysed every 3 months for first 3 years and every 6 months thereafter up to 10 years.
- Further analysis of age, TKI choice and treatment length

CONCLUSIONS

- eGFR appears to decline over time with TKI treatment in CML
- Unclear whether the decline in eGFR is causally related to TKI treatment from these results
- Overall decline in renal function appears mild and gradual
- Renal function should be carefully monitored in patients on long term TKI treatment
- Decline in renal function may be another factor to favour considering a trial of treatment withdrawal

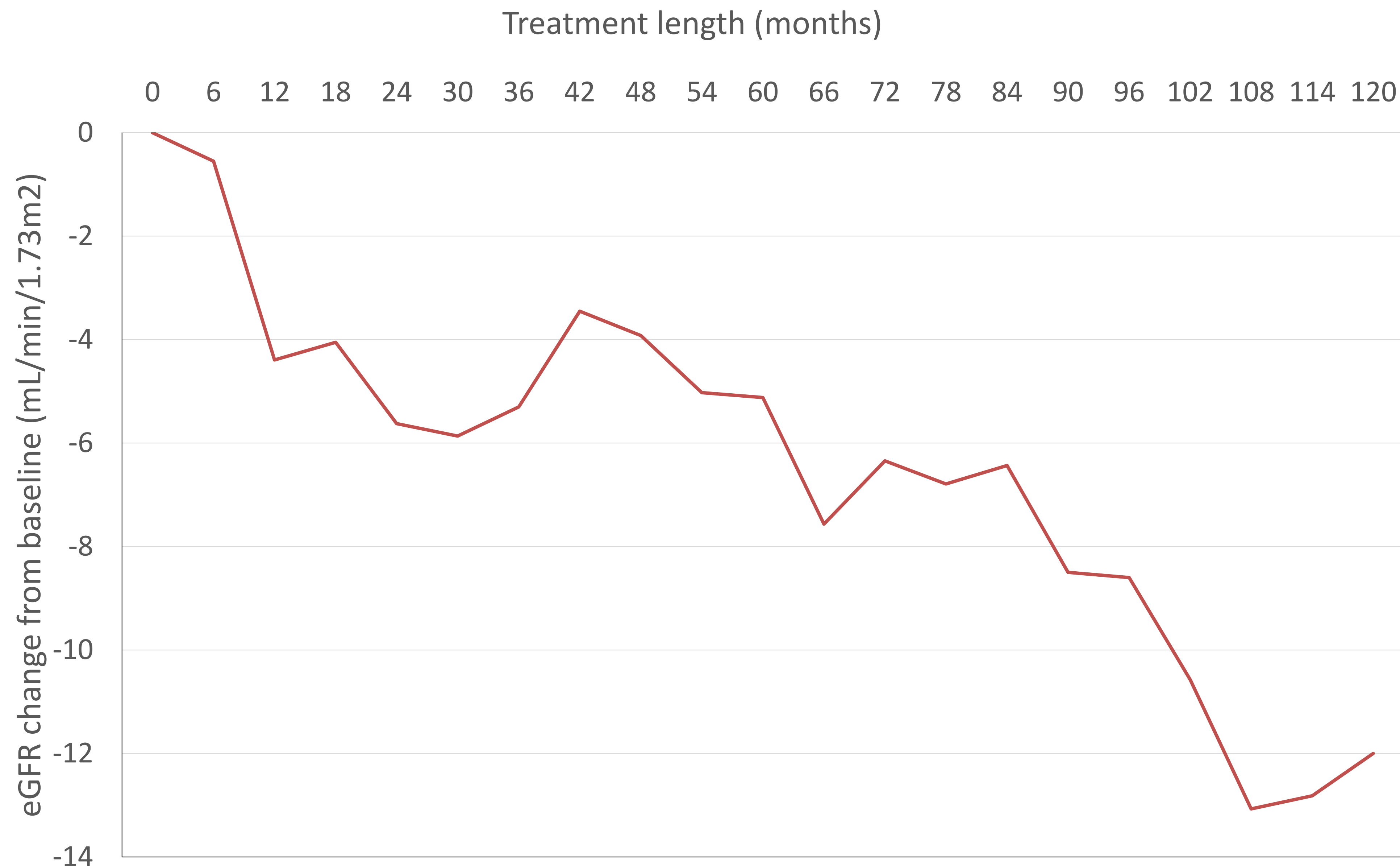
RESULTS

- Analysis of 56 patients, characteristics shown in table 1.
- Mean baseline eGFR was 82.8mL/min/1.73m².
- eGFR declined significantly between first and final recorded eGFR across all patients (p<0.001 Wilcoxon signed rank test) shown in graph 1.
- Greater rate of eGFR decline in patients on Imatinib (not significant) shown in table 2.

Patient characteristic	Result
Number of patients	56
Median age at initiation (range)	48 years (12-77)
TKI choice	Imatinib: 43 Dasatinib: 3 Nilotinib: 8 Bosutinib: 2
Median treatment length (IQR)	72 months (38-105)

Table 1 (above): Summary of patient characteristics

Graph 1 (below): Change in eGFR compared to baseline over time



TKI treatment	Mean eGFR change per year (mL/min/1.73m ²)	95% confidence intervals (mL/min/1.73m ²)
All (n=56)	-2.8	(+6.1 to -11.7)
Imatinib (n=43)	-3.2	(+6.0 to -12.4)
2 nd generation TKI (n=13)	-1.4	(+6.0 to -8.9)

Table 2 (above): eGFR change per year according to TKI treatment

REFERENCES

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