

GETTING THE BASICS RIGHT: RENAL FUNCTION ASSESSMENT FOR PLATINUM CHEMOTHERAPY

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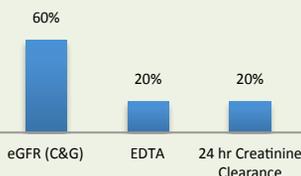
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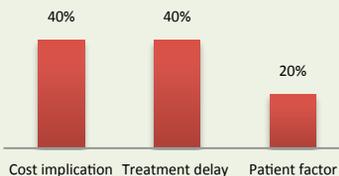
Introduction

Renal function assessment is fundamental in preventing platinum nephrotoxicity. British Oncology Pharmacy Association advocates glomerular function rate (GFR) measurement using 51-Cr EDTA (1). However, this method is laborious, costly and inconvenient (2). An alternative is GFR estimation (eGFR) using Cockcroft and Gault (C&G) formula. A survey and evaluation of practice revealed lack of standardised care. The departmental survey of oncologists' practice had 5 out of 11 responds and highlighted the variability of practice within our department.

Survey: Clinicians method of assessing renal function



Survey: Clinicians reason for not using EDTA in all patients



Objective

The primary objective of this clinical audit was for standardised use of EDTA test in assessing renal function. We aimed for 100% of patients who had renal function assessed by EDTA within set criteria, advised by London Cancer Alliance guideline (3). We also reviewed the impact of renal function assessment in chemotherapy prescribing.

Enhance patient care

Improve service provision

Standardisation of care

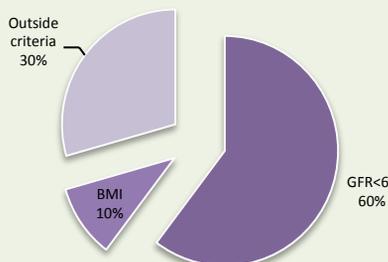
Methods

Dataset of EDTA measurements done within one year (2014-2015) in oncology department were reviewed. Comparison between eGFR (C&G) and EDTA was done. London Cancer Alliance guideline (3) was used as our audit standard, due to lack of national guideline. 51-Cr EDTA was only done if eGFR <60ml/min or >120ml/min, or in patients with extreme BMI (<18.5kg/m² or >30kg/m²). If Creatinine increases more than 25% from baseline, a recalculation of eGFR (C&G) is warranted.

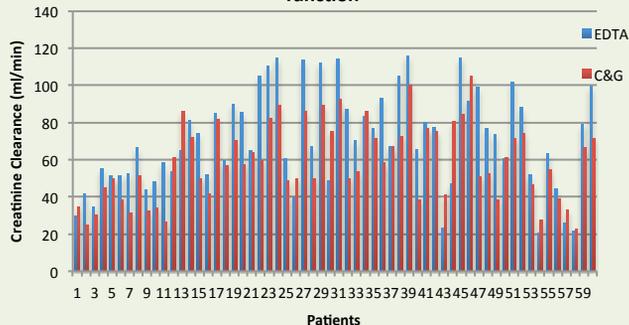
Results

Over a period of one year (May 2014 – May 2015), 68 oncology patients had their EDTA tested. Median age of our patients was 67, ranging from 26 to 84 years old. We had 38 male and 30 female in our patient population. The majority of patients had Cisplatin chemotherapy (44) and a minority had Carboplatin (12). 9 patients ended up not having chemotherapy at all due to poor renal function demonstrated by EDTA or deterioration in performance status. EDTA tests carried out in 30% (20/68) of patients were outside set criteria and could be safely avoided. 70% (48/68) patients had renal function assessed by EDTA within set parameters; low eGFR (<60ml/min) in 41 patients and extreme BMI in 7 patients. EDTA measurement, within set limits, has caused practice change with reduction in dose (20%) and change of drug (5%). Correlation exists between estimated GFR using C&G and measured GFR with EDTA. However, the discrepancy of estimated and measured GFR persists, and cannot be reliably explained by extremes of BMI or weight.

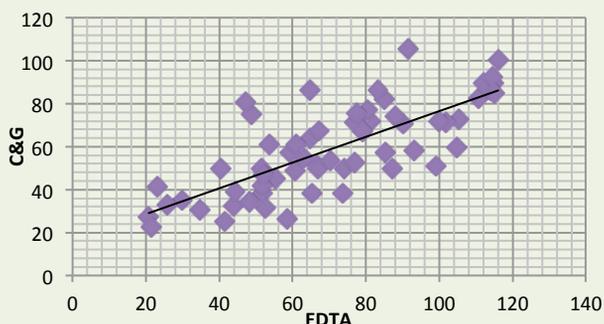
EDTA tests done within set standards



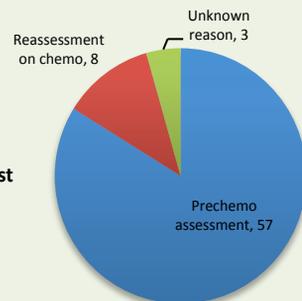
Comparison between EDTA and C&G in assessing renal function



Correlation between C&G and EDTA



Purpose of EDTA request



Summary

EDTA measurement, within set limits, has caused practice change with reduction in dose (20%) and change of drug (5%). EDTA should be carried out within recommended criteria prior to prescribing Cisplatin chemotherapy.

EDTA test prior to Cisplatin for:
-eGFR <60ml/min or >120ml/min
-Extreme BMI (<18.5kg/m² or >30kg/m²)
Recalculate eGFR and consider EDTA if there is an increase of Creatinine >25% from baseline

Conclusion

Presentation of audit highlighted importance of streamlining renal function assessment to optimise cost and service efficiency. Completing audit loop, inclusive of all patients receiving cisplatin chemotherapy, need to be carried out in the future.

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References:

- British Oncology Pharmacy Association (2010), Guidance to support BOPA Standards for Clinical Pharmacy Verification of Prescriptions for Cancer Medicine v1 5
- Fleming JS, Zivanovic MA, Blake GM, Burniston M, Cosgriff PS, Guidelines for the Measurement of Glomerular Filtration Rate using Plasma Sampling, British Nuclear Medicine Society
- <http://www.londoncanceralliance.nhs.uk/media/97046/lca-lung-protocol-pemetrexed-cisplatin.pdf>