

Experience and possible applications for a creatinine Point of Care Test (POCT) in community pharmacy practice.

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Background Availability of the estimated Glomerular Filtration Rate (eGFR) is important for tailoring drug regimen to the individual patient. In The Netherlands, Service Apotheek, a franchise pharmacy chain provided over 300 pharmacies with a POCT for creatinine measurement. All patients, 70 years or older who received a prescription for an antibiotic which is excreted renal, and in whom no recent (i.e. <13 months) eGFR value was known, were approached by the pharmacist for POCT creatinine measurement. Results were published and findings from this pilot revealed that the POCT was a cost effective intervention, resulting in ?86 savings per test. During acute intercurrent illness renal function in patient with Chronic Kidney Disease (CKD) may rapidly decline, resulting in (1) increased toxicity of renal excreted drugs (e.g. lithium, metformin), (2) further decline in renal function by drugs affecting the GFR (e.g. ACE inhibitors), (3) failure of treatment (e.g. nitrofurantoin) and (4) increased risk of end stage renal disease and death.

Purpose The purpose of this (very small) study was to assess the utility of the POCT in ongoing monitoring and adjustment of therapy for patients with poor renal function experiencing intercurrent illness.

Method We assessed renal function with a POCT in 4 patients during intercurrent illness, 2 with cystitis with fever, one during vomiting, one with fever of unknown origin. All patients experienced a significant decline in eGFR (<30 ml/min), which was confirmed by regular lab measurements in two patients (both lab and POCT eGFR values were the same). In the other two patients no regular lab measurements were performed, due to logistic problems.

Findings In two patients with cystitis, antibiotic doses were adjusted according to eGFR, one patient was referred to a nephrologist. In two patients ACE inhibitor and furosemide, dosing was decreased to half the dose, and in one of these patients the sotalol dose was halved and rivaroxaban was temporarily discontinued. All original drugs were resumed in the original dose after renal function improved.

Conclusion A POCT can contribute to the role of the pharmacist in detecting acute decline in renal function. The pharmacist can further contribute in preventing drug induced nephrotoxicity or drug induced toxicity during intercurrent illness in patients with CKD as well as prevention of further deterioration of kidney function. Further study into this topic is warranted.