

Safety of fluorescein angiograms in patients with chronic kidney disease

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Editor, whilst contrast induced nephropathy is a well-recognised phenomenon there is very little published data in the literature on the effect of fluorescein sodium on renal function with only a single study [1] demonstrating a minor effect within diabetic patients. However, as ophthalmologists we are advised that fluorescein is a relative contraindication in those patients with established renal impairment and we should consider lower doses when performing FFA in these patients [2].

We report the results of a prospective case series assessing renal function in patients with established chronic kidney disease (CKD) undergoing FFA over a 4-month period. Eleven consecutive diabetic patients were identified with CKD stage 3 or greater defined as *moderate* decrease in estimated glomerular filtration rate (eGFR) of less than 60 ml/min. Blood samples measuring serum eGFR and creatinine were obtained from all patients immediately prior to and 2 days' post FFA (5 ml of 10%) to look for evidence of acute changes in these indices.

We found average pre and post FFA serum eGFR to be 40.6 and 41 and average pre and post FFA serum creatinine to be 145.8 and 139 respectively. Using paired t-test to calculate p-values with $p < 0.05$ as statistically significant our results demonstrate that neither serum creatinine nor eGFR showed a statistically significant change with $p = 0.75$ and $p = 0.36$ respectively. No adverse reactions or events were reported.

To the best of our knowledge this is the first UK based prospective case series looking at changes in both serum creatinine and eGFR levels within a cohort of patients with known renal impairment post FFA. Previous studies have either used lower doses such as 2.5 mls 10% Fluorescein Sodium [3] or only measured a single outcome measure [1] i.e. serum creatinine with only subgroup analyses of patients with renal impairment and have shown no effect. With a lack of consensus in current practice on performing FFA in patients with known renal impairment our small study demonstrates the safety profile of fluorescein sodium at normal doses *i.e.*, 5 ml 10% in patients with CKD stage 3A and 3B. Moreover, no patients suffered any adverse effects or required any medical treatment for exacerbation of renal impairment. However, larger prospective studies are required to determine safety profiles at varying degrees of renal function.

References

1. Alemzadeh-Ansari MJ, Beladi-Mousavi SS, Feghhei M (2011) Effect of fluorescein on renal function among diabetic patients. *Nefrologia* 31: 612-613. [[Crossref](#)]
2. Denniston AKO, Murray PI (2014) Oxford Handbook of Ophthalmology. Third Edition. United Kingdom: Oxford University Press.
3. Kameda Y, Babazono T, Haruyama K, Iwamoto Y, Kitano S (2009) Renal function following fluorescein angiography in diabetic patients with chronic kidney disease. *Diabetes Care* 32: e31. [[Crossref](#)]

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Received: February 20, 2017; **Accepted:** March 08, 2017; **Published:** March 13, 2017