Background: Chronic kidney disease (CKD) is defined as a permanent (minimum three month) reduction in glomerular filtration rate. [1] 10-30% of rheumatoid arthritis patients (RA) have CKD, compared to 5% of the general population. [1] There are several causes of CKD associated with RA including persistent inflammation, cardiovascular risk factors, frequent use of non-steroidal anti-inflammatory drugs and amyloidosis. [1] CKD in RA patients is associated with increased mortality. [2]

The use of biologic and targeted synthetic DMARDs for treating RA has increased significantly in recent years. Studies have shown these therapies might reduce the risk of developing CKD in RA. [3] However, conversely, biologics have been linked to the development of glomerulonephritis. [4]

Surprisingly few studies have explored the use of biologics in patients with pre-existing renal disease and whether they contribute to renal impairment themselves. Objectives: Our objectives were to explore the renal safety profile of biologic and targeted synthetic DMARDs in a real-world cohort of RA patients with and without pre-existing CKD.

Methods: A retrospective observational study was completed using the Biologic Therapy Database at Cannock Chase Hospital. Inclusion criteria were a diagnosis of RA and current treatment with a biologic or targeted synthetic DMARD.

Demographic data, renal function at biologic initiation and any deterioration of renal function were among the recorded information for each patient. Patients with insufficient information available via electronic patient records were excluded.

Results: 998 RA patients on biologics were identified, of whom 213 were excluded. Of the 785 remaining patients, a 3:1 female to male ratio was noted with a mean age of 62.40% of patients were on an anti-TNF, 22% rituximab, 15% abatacept, 15% JAK inhibitors and 9% anti-IL6 respectively. At biologic initiation 92% of the patients had a GFR of >60 ml/min per 1.73m², 4.8% had a GFR of 30-60 (CKD stage 3a-3b), <1% stage 4 CKD. No patients in the cohort had CKD stage 5 at biologic initiation.

Overall, 13 patients had significant pre-existing CKD (eGFR <45) of these, 6 were treated with abatacept, 7/13 patients had no co-morbid risk factors for CKD – of those remaining, 2 were hypertensive, 2 diabetic and 2 both. None of these 13 patients experienced a drop in renal function by more than 1 stage since initiation of current biologic.

Of those patients without prior CKD at the point of biologic initiation (GFR >45), only 15 patients (2%) developed new renal impairment whilst on biologic treatment. 10 patients’ renal function dropped by one stage and five patients by two stages. Crucially, 12 of the 15 patients were aged ≥75yrs and 10 patients had at least one other associated risk factor (e.g. diabetes). Only one patient in the cohort developed renal impairment as a direct result of a biologic - minimal-change disease secondary to etanercept.

Conclusion: Our findings indicate that biologic treatments have a good renal safety profile – even with pre-existing CKD. RA patients most at risk of developing CKD whilst on biologics are likely to have other risk factors such as diabetes or hypertension. As previously stated, there is a very rare association of anti-TNF biologics causing glomerulonephritis.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3759

REFERENCE:
[3] Disclosure of Interests: None declared

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ARE BIOLOGIC AND TARGETED SYNTHETIC DMARDs SAFE TO USE IN PATIENTS WITH RENAL IMPAIRMENT?

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Disclosure of Interests: None declared

BACKGROUND:
Chronic kidney disease (CKD) is defined as a permanent (minimum three month) reduction in glomerular filtration rate. [1] 10-30% of rheumatoid arthritis (RA) patients have CKD, compared to 5% of the general population. [1] There are several causes of CKD associated with RA including persistent inflammation, cardiovascular risk factors, frequent use of non-steroidal anti-inflammatory drugs and amyloidosis. [1] CKD in RA patients is associated with increased mortality. [2]

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DOI: 10.1136/annrheumdis-2021-eular.3759

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.3817