

Background

- American Diabetes Association (ADA) recommends a blood pressure goal of less than 140/90 to reduce cardiovascular disease related mortality and slow the rate of CKD
- ADA also recommends blood pressure goal below 130/80 in diabetic individuals with albuminuria, although this could potentially result in adverse cardiovascular outcomes
- Most studies primarily analyzed rate of cardiovascular events or renal impairment in non-diabetic patients
- Very few studies looked at how different blood pressure goals impact renal function in diabetic patients
- Our study looked at whether more intensive blood pressure control less than 130/80 impacts the progression of CKD

Hypothesis

Diabetic individuals with an intensive blood pressure goal of less than 130/80 will have no significant difference in their incidence and progression of CKD compared to individuals with a standard blood pressure goal of less than 140/90

Acknowledgement

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Reference

- American Diabetes Association; 9. Microvascular Complications and FootCare. *DiabetesCare* 1 January 2016; 39 (Supplement_1): S72-S80. <https://doi.org/10.2337/dc16-S012>.

eGFR Differences in Intensive and Standard Blood Pressure Groups

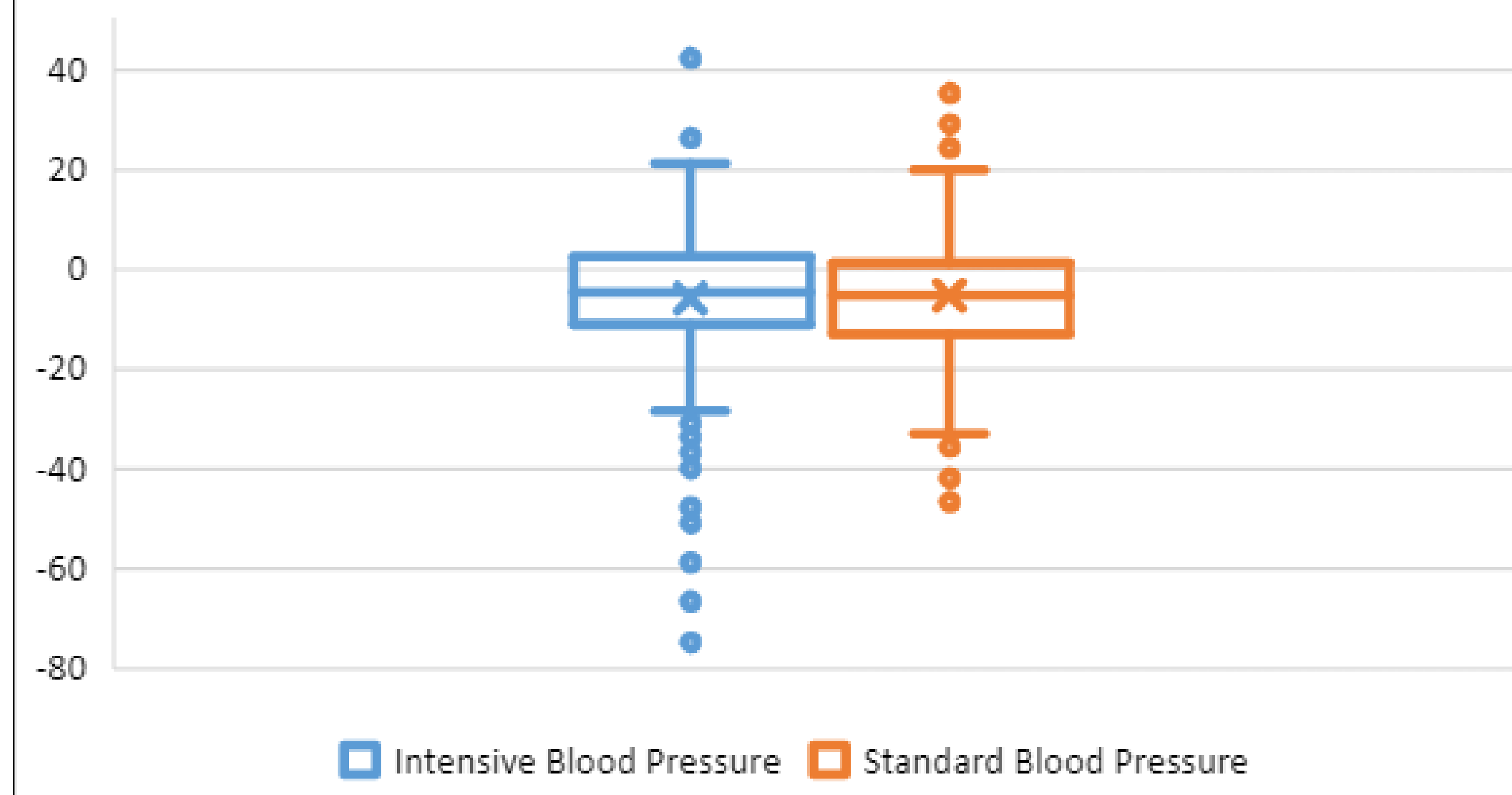


Figure 1: This box and whisker plot shows the dispersed data points of renal function change in Intensive and Standard groups.

Mean eGFR Change in Intensive and Standard Blood Pressure Groups

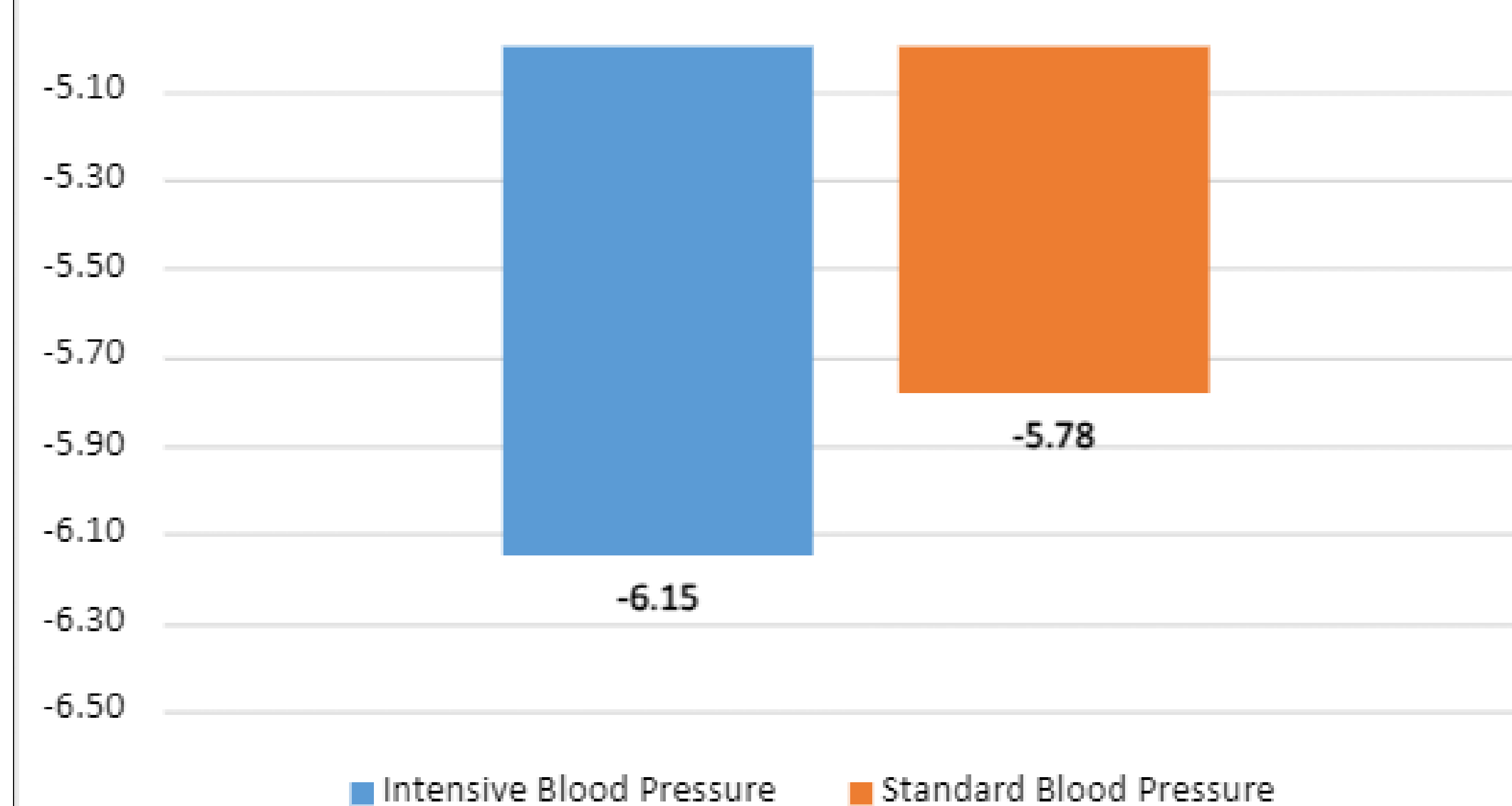


Figure 2: This graph displays the average change in eGFR for both Intensive and Standard groups.

Conclusion

- There is no significant change of renal function for either diabetic patients in the intensive or standard blood pressure groups
- Setting an intensive blood pressure control goal less than 130/80 for diabetic patients may not help impact the progression of CKD
- Future studies should consider using a larger sample size and looking into other relevant lab values in diabetic patients with CKD

Methods

- Retrospective chart review collected pertinent lab values of patients with type 1 and type 2 diabetes from Rowan Family Medicine clinics in New Jersey
- Patients included if between 18-70 years of age and attended office visits in 2017-2018 and 2021-2022
- Relevant lab values that were compiled for this study are: systolic blood pressure, diastolic blood pressure, hemoglobin A1c, and estimated glomerular filtration rate (eGFR)
- Patients were grouped into one of two categories depending on their diastolic and systolic readings from their 2021-2022 office visits :
 - Intensive blood pressure
 - Standard blood pressure
- Intensive blood pressure in this study was defined by a reading less than 130/80 and standard blood pressure was defined by a reading less than 140/90
- A two tailed t-test assuming equal variance was performed as the statistical test of choice

Results

- Intensive blood pressure group had a total sample size of 331 patients
- Standard blood pressure group had a total sample size of 150 patients
- Greatest decrease in eGFR seen in the intensive group was a value of -75 and greatest increase was a value of 42
- In the standard group, the greatest decrease in eGFR was a value of -47 and the greatest increase in eGFR was a value of 35
- There was no statistically significant change in renal function between the two groups (p=0.781)