POLIMORPHONUCLEARS AS A MARKER OF INFLAMMATION IN PATIENTS WITH CHRONIC KIDNEY DISEASE

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INTRODUCTION

▪ Chronic kidney disease (CKD) is associated with immune activation and systemic inflammation that seems to occur early in the course of the disease.
▪ Polymorphonuclears (PMNs) play a critical role in chronic inflammation and migration is a marker of their function. The best marker for inflammation in CKD is not defined.

OBJECTIVE

To evaluate PMNs as inflammatory markers in CKD patients

METHODS

❖ **Patients**: non dialysed CKD patients under regular treatment with interdisciplinary team, for at least 1 year, at the Hospital of the Rio de Janeiro State University, Brazil

❖ estimated glomerular filtration rate (**eGFR**): CKD-EPI equation

❖ **Polimorphonuclears-PMN evaluation:**

➢ **ability to migrate:**

I. toward formyl-methionyl-leucylphenylalanine (**fMLP, 100 nM**)

II. toward medium (**random migration**)

➢ PMN basal ROS production

• experimental conditions: 37 C; 5%CO_2; for 1 hour

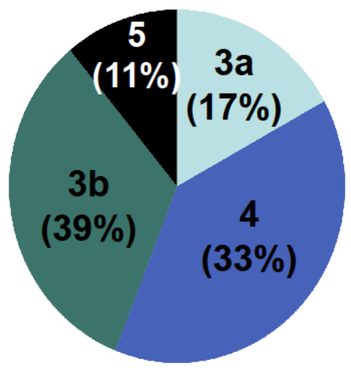
❖ Statistical analysis:

➢ PMNs migration and ROS production according to CKD stages-by ANOVA and T- test.

RESULTS

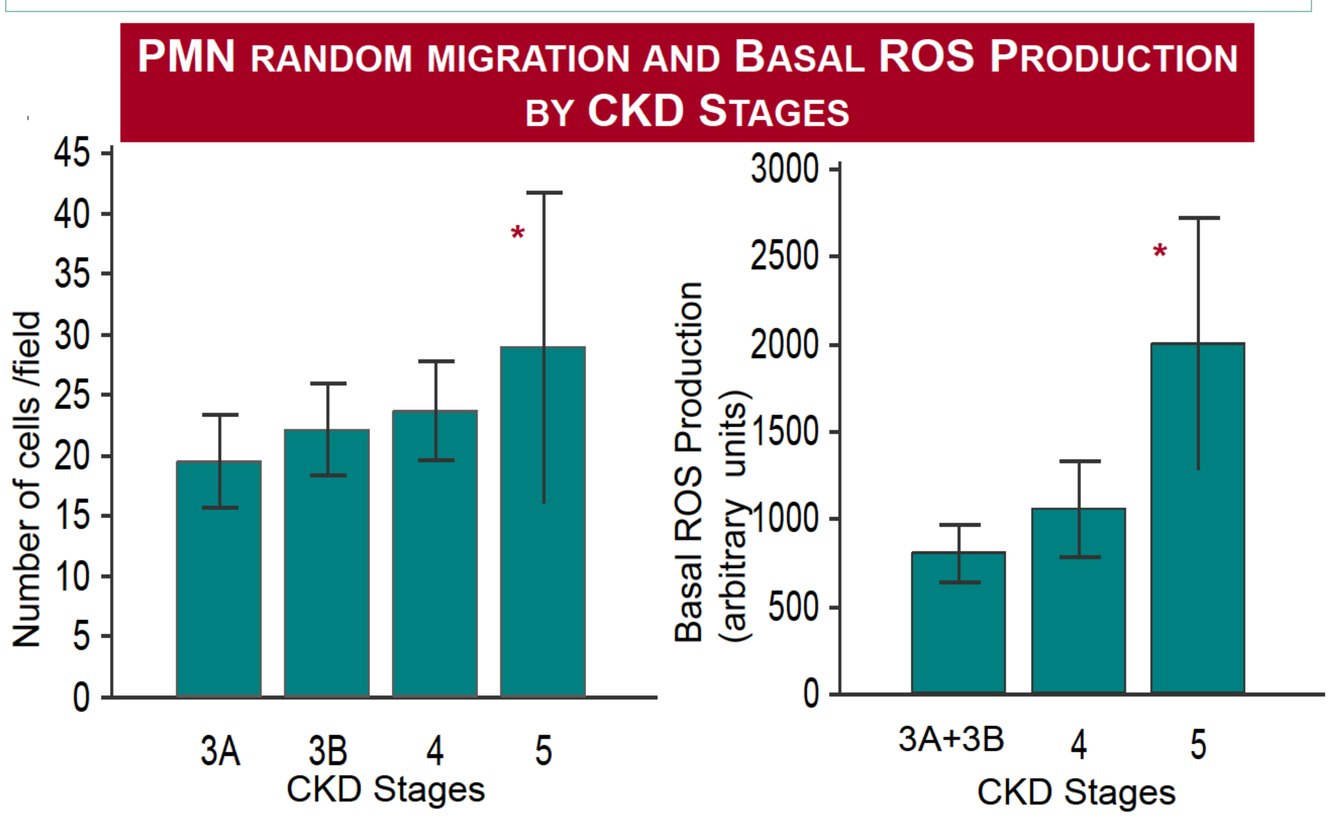
PATIENTS: • **n**= 54 {53% men} • **age**: **66.3**±12.2 years (32 - 87)
• **treatment period**: **4.9±** 3.2 years

CKD STAGES DISTRIBUTION

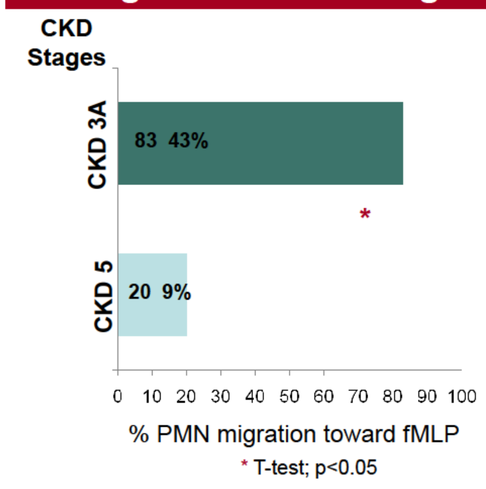


Laboratorial Parameters	Mean±standard deviation
eGFR (mL/min.)	**32**±13 (min. 8.5-max.: 50)
Urea (mg/dL)	**87**±32
Uric acid (mg/dL)	**7.9**±1.9
Glucose (mg/dL)	**121**±82
Total cholesterol (mg/dL)	**189**±48
Hemoglobin (g/dL)	**12.3**±1.4
Ferritin (mg/L)	**142**±114
Albumin (g/dL)	**4.5**±0.1
Ca (mg/dL)	**9.5**±0.4
PO4 (mg/dL)	**3.8**±0.7

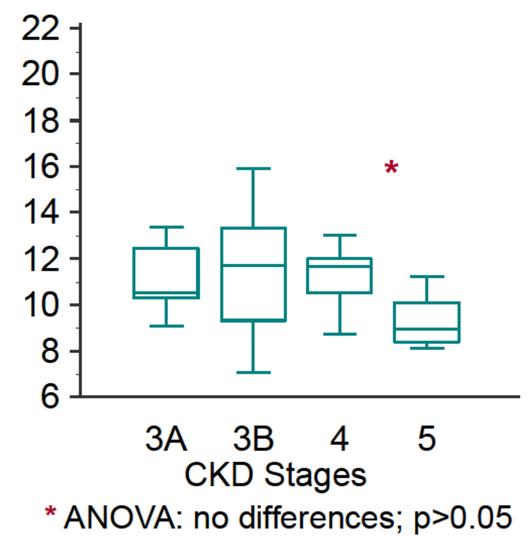
PMN RANDOM MIGRATION AND BASAL ROS PRODUCTION BY CKD STAGES



PMNs chemotaxis to fMLP was reduced comparing CKD stage 3A vs CKD stage 5



IL8 LEVELS ACCORDING TO CKD STAGES



CONCLUSIONS

❖ Data suggest that eGFR is associated with the desensitization of circulating PMNs to fMLP, which may contribute to CKD- associated inflammation. Interleukin was not able to identify these alterations.

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