Association of urinary albumin-creatinine ratio with glycemic status and lipid profile - A retrospective cross-sectional study

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Introduction:

- Diabetic nephropathy is a serious complication of T2DM.

- Dyslipidemia, another complication of diabetes, can exacerbate kidney damage through atherosclerosis, while impaired kidney function may disrupt lipid metabolism causing dyslipidemia, suggesting a bidirectional relationship that is crucial for developing integrated management strategies for T2DM patients.
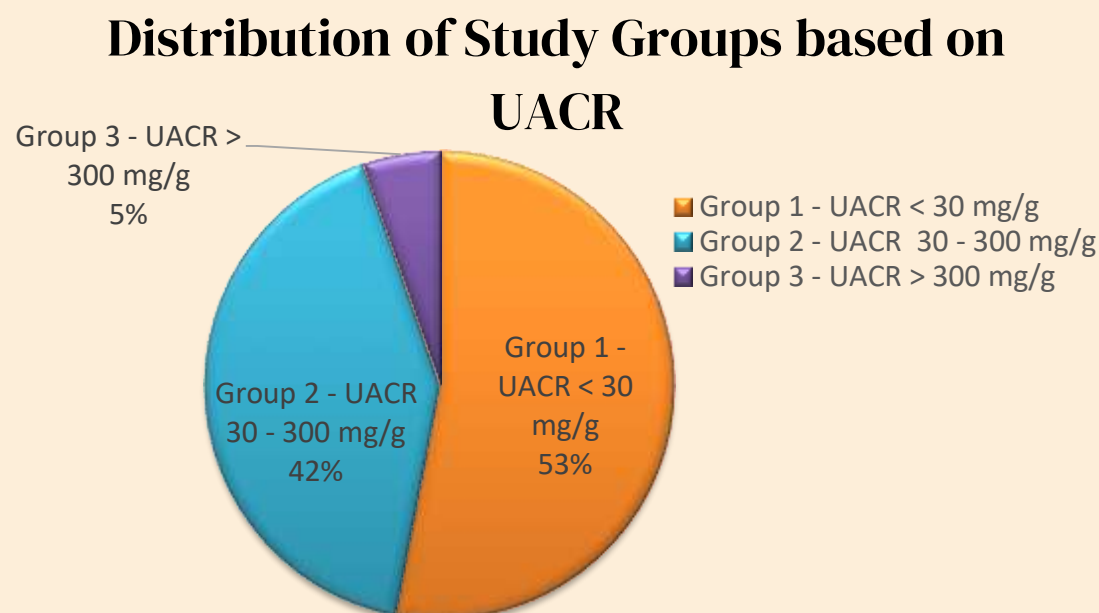
Aim and objectives:

- To evaluate the association between Urine Albumin-Creatinine Ratio (UACR), lipid profile parameters, and HbA1c in patients with Type 2 Diabetes Mellitus.

Methodology:

- A total of 300 patients aged above 18 years with T2DM, from our institution's Internal Medicine department were included.

- Exclusion criteria: Patients with severe cardiovascular, renal, liver diseases and using lipid-altering medications were excluded.

- Patients' data were collected from HIS (Hospital Information System) and analyzed following approval from ethics committee. (IHEC Number-24/341)

Results:

Characteristics	Mean	Standard deviation
Age (in years)	59.04	12.01
Fasting plasma glucose(mg/dL)	135.47	73.47
Post-prandial plasma glucose(mg/dL)	191.04	85.30
HbA1c(%)	7.3402	1.79
Serum cholesterol (mg/dL)	158.13	39.27
Serum triglyceride(mg/dL)	141.68	81.69
Serum HDL (mg/dL)	41.90	10.48
Serum LDL (mg/dL)	103.07	60.53
Serum VLDL (mg/dL)	28.07	16.05

Distribution of Study Groups based on UACR

Group 3 - UACR > 300 mg/g 5%

Group 1 - UACR < 30 mg/g
Group 2 - UACR 30 - 300 mg/g
Group 3 - UACR > 300 mg/g

Group 2 - UACR 30 - 300 mg/g 42%

Group 1 - UACR < 30 mg/g 53%

ANOVA results among the study groups:

Parameter	p-value
HbA1c	.000
Serum cholesterol	.239
Serum triglyceride	.842
Serum HDL	.116
Serum LDL	.515
Serum VLDL	.717

Conclusion:

- In our study, among the 300 participants, that were divided into 3 groups based on UACR, HbA1c levels significantly differed between Groups 1 and 2 (p<0.001), but no significant differences were found in lipid profiles.

- This study demonstrated a significant correlation between UACR and HbA1c, highlighting the importance of glycaemic control in preventing diabetic nephropathy.

References:

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