TABLE SHELLS

**Aims**:

1. Examine the cross-sectional association of urinary vitamin D binding protein loss with severity of kidney dysfunction, degree of glucose tolerance, and serum levels of 25-hydroxyvitamin D.
2. Identify metabolic risk factors for early renal decline in this cohort, specifically,

**Table** 1. Subject characteristics of the PROMISE cohort at baseline, 3-year, and 6-year.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | Baseline | 3-Year | 6-Year |
| Age (years) | |  |  |  |
| Ethnicity | European |  |  |  |
| Latino/a |  |  |  |
| Other |  |  |  |
| South Asian |  |  |  |
| Sex | Female |  |  |  |
| Male |  |  |  |
| BMI | |  |  |  |
| Waist Circumference (cm) | |  |  |  |
| Estimated GFR (ml/min/1.73m^2) | |  |  |  |
| Microalbumin:Creatinine | |  |  |  |
| Urinary Creatinine (mmol/L) | |  |  |  |
| Urinary Microalbumin (mg/L) | |  |  |  |
| Urinary VDBP (ng/mL) | |  |  |  |
| Serum Creatinine (μmol/L) | |  |  |  |
| Serum 25(OH)D (nmol/L) | |  |  |  |
| Systolic Blood Pressure (mmHg) | |  |  |  |
| Diastolic Blood Pressure (mmHg) | |  |  |  |
| Mean Arterial Pressure (mmHg) | |  |  |  |
| Parathyroid Hormone (pmol/L) | |  |  |  |
| Serum ALT (U/L) | |  |  |  |
| Glucose Levels (mmol/L) | Fasting |  |  |  |
| 2h OGTT |  |  |  |
| Glucose tolerance status | Diabetes |  |  |  |
| Normal |  |  |  |
| Prediabetes |  |  |  |

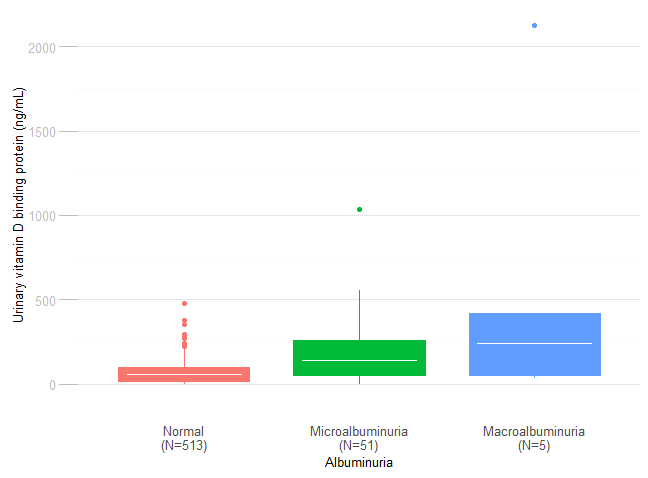
# Cross-sectional (baseline)

|  |  |
| --- | --- |
| A |  |
| B |  |

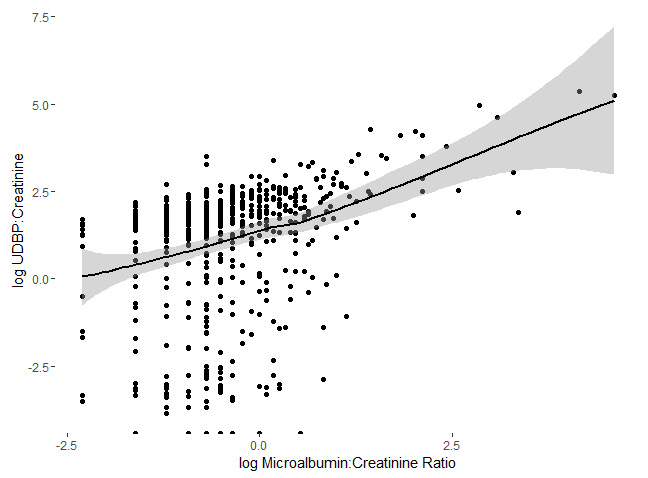
**Figure**: Boxplot of eGFR categories and UDBP at baseline. There does not seem to be a big difference between (**A**) all subjects and (**B**) subjects with CRP < 10 mg/L.

|  |  |
| --- | --- |
|  |  |
|  |  |

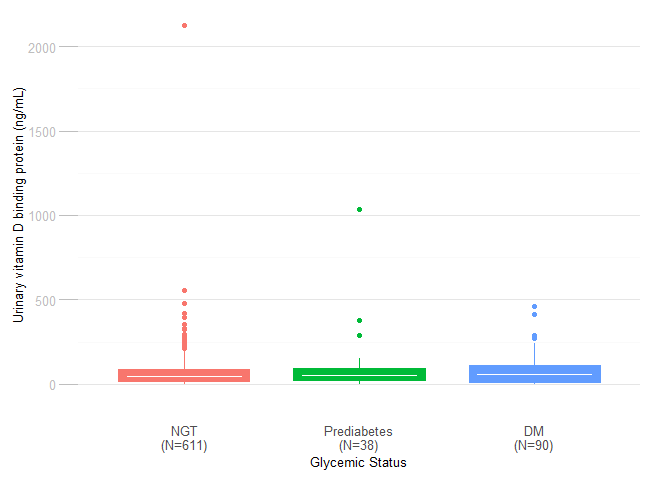
**Figure**: Scatterplot with LOESS curve of eGFR and UDBP at baseline. There does not seem to be a big difference between (**A**) all subjects and (**B**) subjects with CRP < 10 mg/L.



**Figure**: Boxplot of MCR categories and UDBP at baseline.



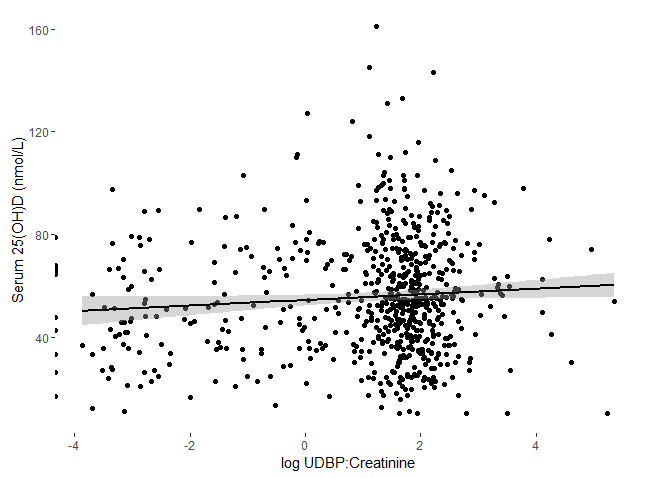
**Figure**: Scatterplot with LOESS curve of MCR and UDBP at baseline.



**Figure**: Boxplot of glycemic status and UDBP at baseline.

|  |  |
| --- | --- |
| A |  |
| B |  |

**Figure**: Scatterplot of (**A**) fasting glucose and (**B**) 2h post-OGTT blood glucose and UDBP at baseline.



**Figure**: Scatterplot with LOESS curve of serum 25(OH)D and uVDBP at baseline.

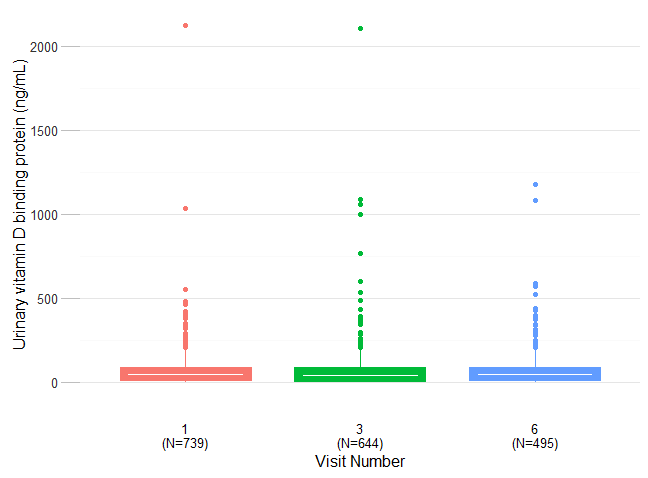
**Table**: Subgroup analysis of above to see if there are any groups in which 25(OH)D goes down with UDBP loss

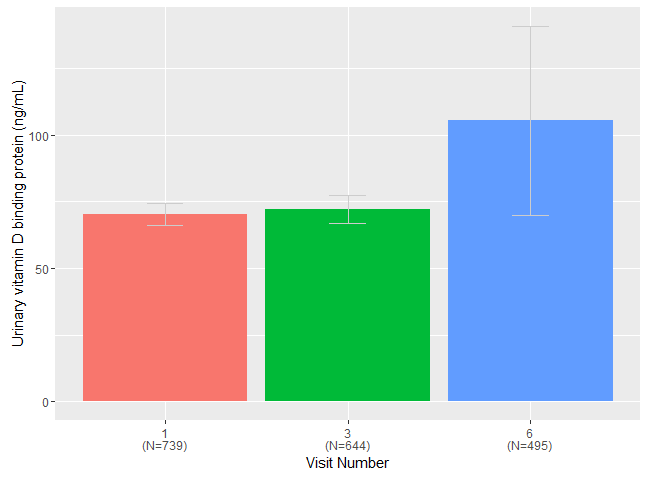
|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | | **Correlation Coefficient** | **p-value** | **Figure** |
| **Glucose tolerance status** | Normal | 0.028 | 0.05 | A |
| Prediabetes | -0.039 | 0.83 | B |
| Diabetes | -0.15 | 0.18 | C |
| **eGFR status** | Normal | 0.017 | 0.70 | D |
| Mild | -0.098 | 0.32 | E |
| Moderate | N/A (n = 2) | N/A | N/A |
| Hyperfiltration | 0.083 | 0.59 | F |
| **MCR status** | Normal | 0.032 | 0.48 | G |
| Microalbuminuria | 0.011 | 0.94 | H |
| Macroalbuminuria | -0.90 | **0.037** | I |
| **CRP < 10** | | -0.0022 | 0.96 | J |
| **Smoking + CRP < 10** | Yes | -0.066 | 0.28 | K |
| No | 0.059 | 0.28 | L |
| **Liver function (ALT) + CRP < 10** | Normal (7 – 56 U/L) | -0.0059 | 0.88 | M |
| Abnormal | 0.11 | 0.46 | N |

|  |  |
| --- | --- |
| A |  |
| B |  |
| C |  |
| D |  |
| E |  |
| F |  |
| G |  |
| H |  |
| I |  |
| J |  |
| K |  |
| L |  |
| M |  |
| N |  |

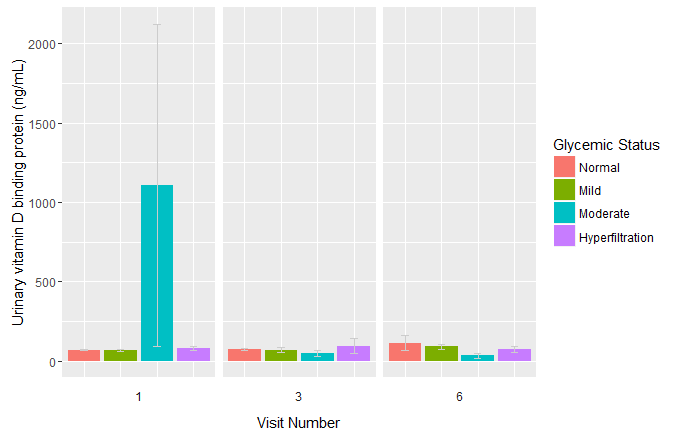
**Figure**: Scatterplot with linear regression of the relationship between uVDBP loss and serum 25(OH)D. Different subsets of the sample was used (refer to table above).

# Longitudinal

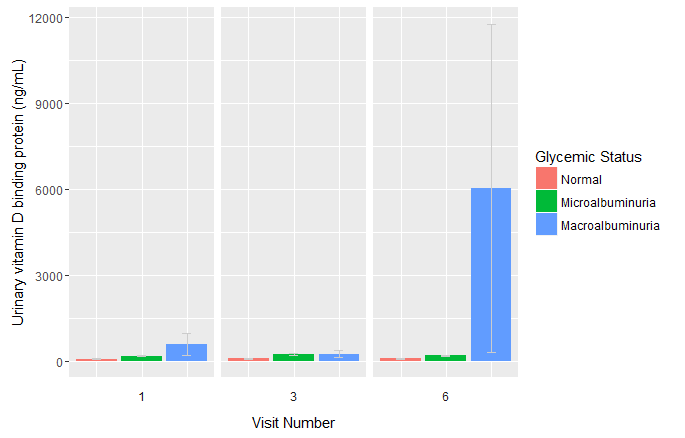




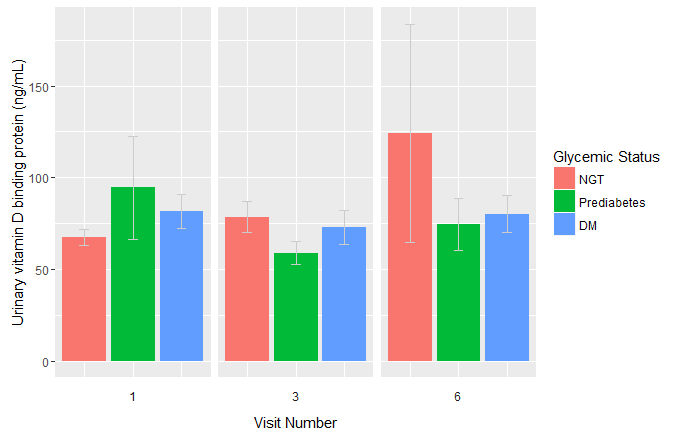
**Figure**: Mean urinary vitamin D binding protein concentrations across eGFR categories at different time points. The boxplot shows the median and interquartile range, while the bar graph shows the mean ± SD (not sure of bar graph or boxplot would be better to represent the data).



**Figure**: Mean urinary vitamin D binding protein concentrations across eGFR categories at different time points.

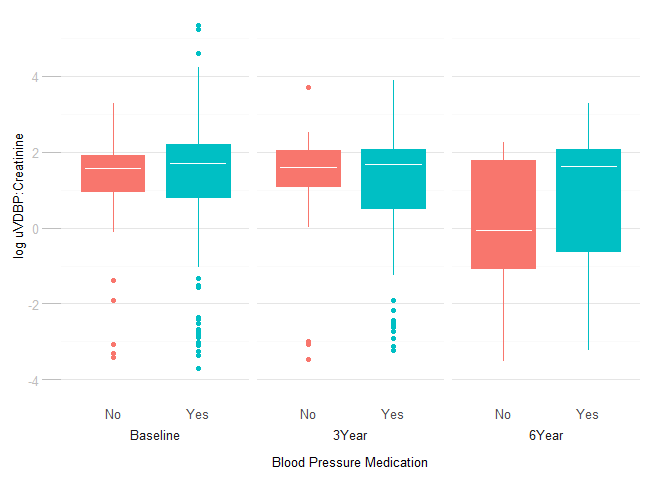


**Figure**: Mean urinary vitamin D binding protein concentrations across MCR categories at different time points.



**Figure**: Mean urinary vitamin D binding protein concentrations across diabetic categories at different time points.

# Medication



**Figure**: Boxplot of blood pressure medication and uVDBP concentration at baseline, 3-year, and 6-year. Only subjects with CRP < 10 mg/L were selected.

|  |  |
| --- | --- |
| A |  |
| B |  |
| C |  |

**Figure:** Boxplot of blood pressure medication and uVDBP in subjects with (**A**) normal eGFR, (**B**) mildly impaired eGFR, (**C**), moderately impaired eGFR, and (**D**) hyperfiltration. Only baseline measures were examined, and subjects had CRP < 10 mg/L.

NOTE ABOUT FIGURE C: There are 5 subjects with CRP < 10 mg/L and hyperfiltration at 6-year, but blood pressure medication data is not available for those subjects.

|  |  |
| --- | --- |
| A |  |
| B |  |
| C |  |

**Figure:** Boxplot of blood pressure medication and uVDBP in subjects with normal albuminuria, microalbuminuria, and macroalbuminuria. Only baseline measures were examined, and subjects had CRP < 10 mg/L.

NOTE ABOUT FIGURE C: There are only 3 subjects with macroalbuminuria at 6-year, and none of those subjects have CRP data.

|  |  |
| --- | --- |
| A |  |
| B |  |
| C |  |

**Figure:** Boxplot of blood pressure medication and uVDBP in subjects with normal glucose tolerance, prediabetes, and diabetes at (**A**) baseline, (**B**) 3-year, and (**C**) 6-year. Only baseline measures were examined, and subjects had CRP < 10 mg/L.

NOTE ABOUT FIGURE C: Missing the DM group because although there are 70 subjects with blood pressure medication data and diabetes in 6-year, none of those subjects had CRP < 10 mg/L (there were only 2 subjects with CRP data though).

**Table**: Multivariate analysis for the relationship between 25(OH)D and UDBP

|  |  |  |  |
| --- | --- | --- | --- |
| Model | Adjusted for | Beta | p-value |
| 1 | Unadjusted |  |  |
| 2 | Model 1 plus age, sex, ethnicity, BMI |  |  |
| 3 | Model 2 plus diabetic and kidney status |  |  |
| 4 | Model 3 plus medication (hypertension, diabetes, diuretic) |  |  |