

Microalbuminuria and glomerular filtration rate in SGA born young adults

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SGA and long-term GH treatment do not lead to microalbuminuria and do not negatively influence kidney function and blood pressure

Background

Low birth weight is linked to fewer glomeruli, which might lead to an increased risk for developing glomerulosclerosis, decreased renal function with a lower glomerular filtration rate (GFR) and increased microalbuminuria.

Objective

To compare albumin excretion and GFR in 4 different groups of young adults, and to assess whether birth weight, catch-up growth or GH treatment has an effect on these parameters.

Methods

Kidney function (GFR and urinary albumin excretion) and blood pressure were measured in 161 young adults, consisting of 4 different groups:

SGA born young adults with:

- GH treatment during childhood (SGA-GH)
- Persistent short stature (SGA-S)
- Spontaneous catch-up growth (SGA-CU)

AGA born young adults with normal adult height.

We measured urine creatinine and albumin and serum creatinine levels. GFR was calculated. All results were compared between the 4 groups.

Microalbuminuria: urinary albumin to creatinine ratio > 1 mg/mmol.

Participants had mean age of 20.7 years, which was similar in all groups.

Results

Mean urine albumin levels were similar in all groups: 0.037mg/mmol in SGA-GH, 0.008mg/mmol in SGA-S, 0.023mg/mmol in SGA-CU and 0.033g/L in AGA. (p=0.058). Two participant had moderate microalbuminuria (1 SGA-GH, 1 AGA).

Estimated GFR was similar in all groups: 110.6mL/min in SGA-GH, 111.4 mL/min in SGA-S, 108.9mL/min in SGA-CU and 102.5mL/min in AGA (p=0.465)

No significant correlation was found between change in height SDS from birth to adult height and kidney function parameters at 21 years of age.

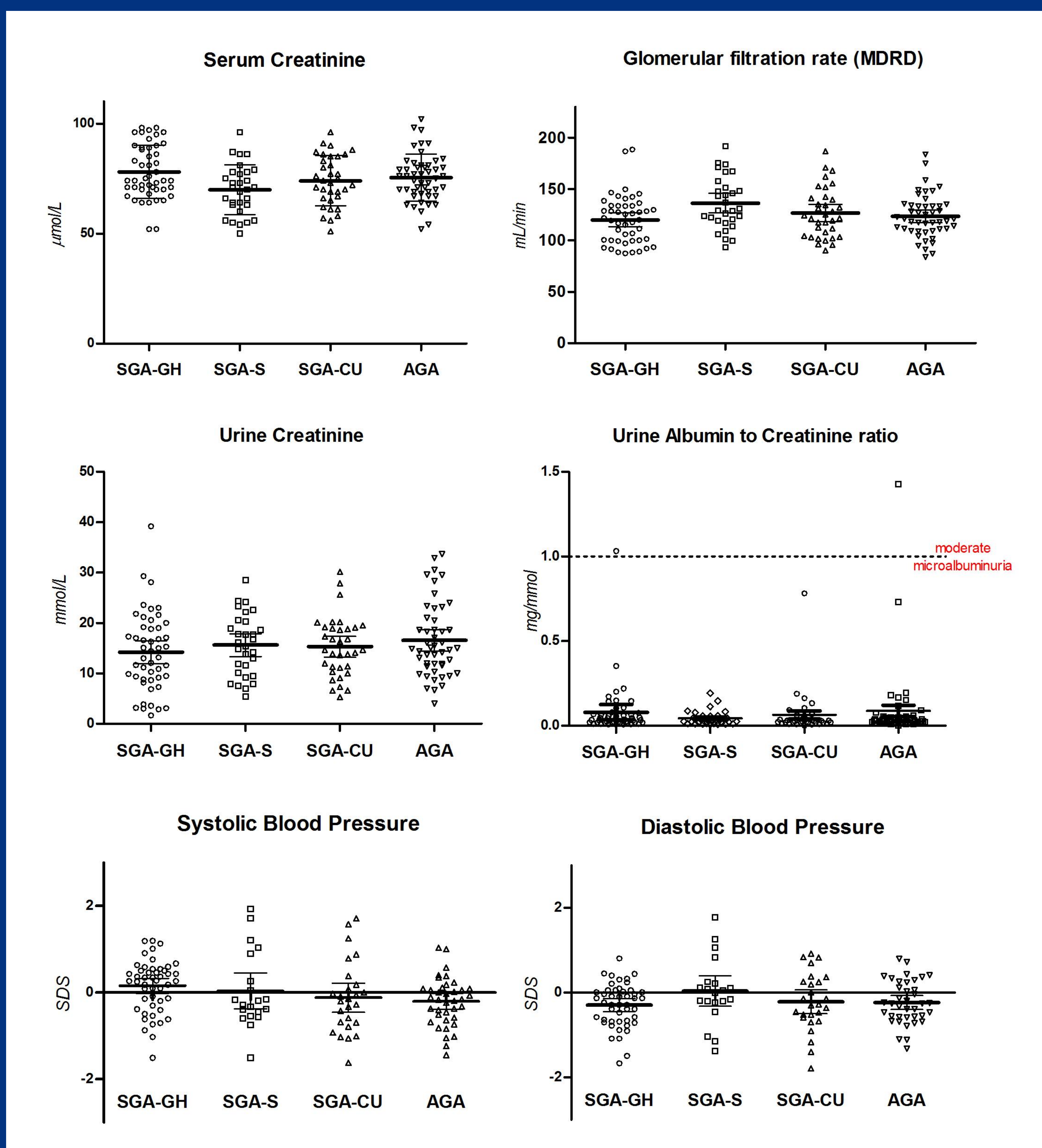


Figure 1. Serum and urine values for albumin and creatinine and blood pressure in SGA-GH, SGA-S, SGA-CU and AGA. Dotted line in "Urine Albumin to Creatinine ratio" indicates moderate microalbuminuria.

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