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# Significance of urinary Aminopeptidase N in early diagnosis of kidney damage in children with type 1 diabetes mellitus

*Vikhrova Iryna, Loboda Andrii*

*Sumy State University, Medical Institute, Sumy, Ukraine*

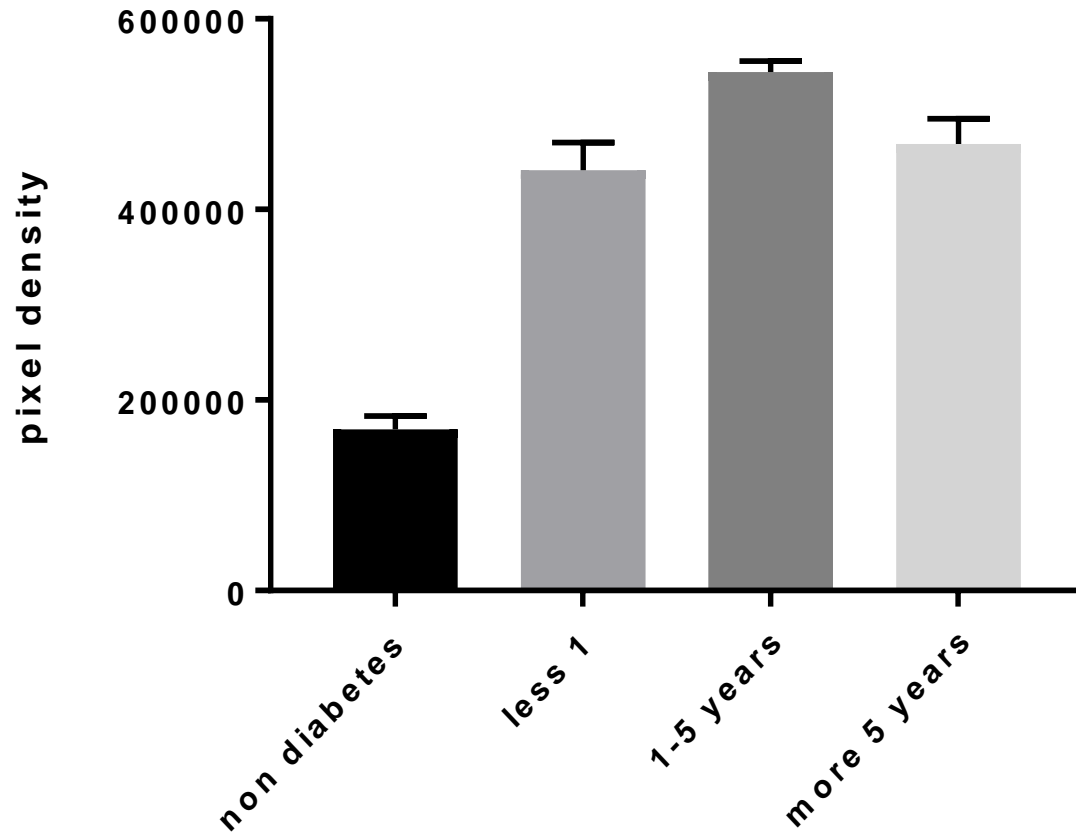
**Background.** Diabetes mellitus is a global health problem resulting in social and economic effects. The possibility of early formation (in five years of disease duration) of micro and macrovascular complications makes the problem of T1DM extremely actual. Diabetic nephropathy is one of the common complications of diabetes. Aminopeptidase N (ANPEP) is an exopeptidase that is expressed by glomerular, mesangial, and renal tubular cells. ANPEP in urine is one of the first markers of renal damage when microglobulin levels are within normal limits.

**Aim.** To investigate the features ANPEP levels in urine of children depending on the diabetes duration.

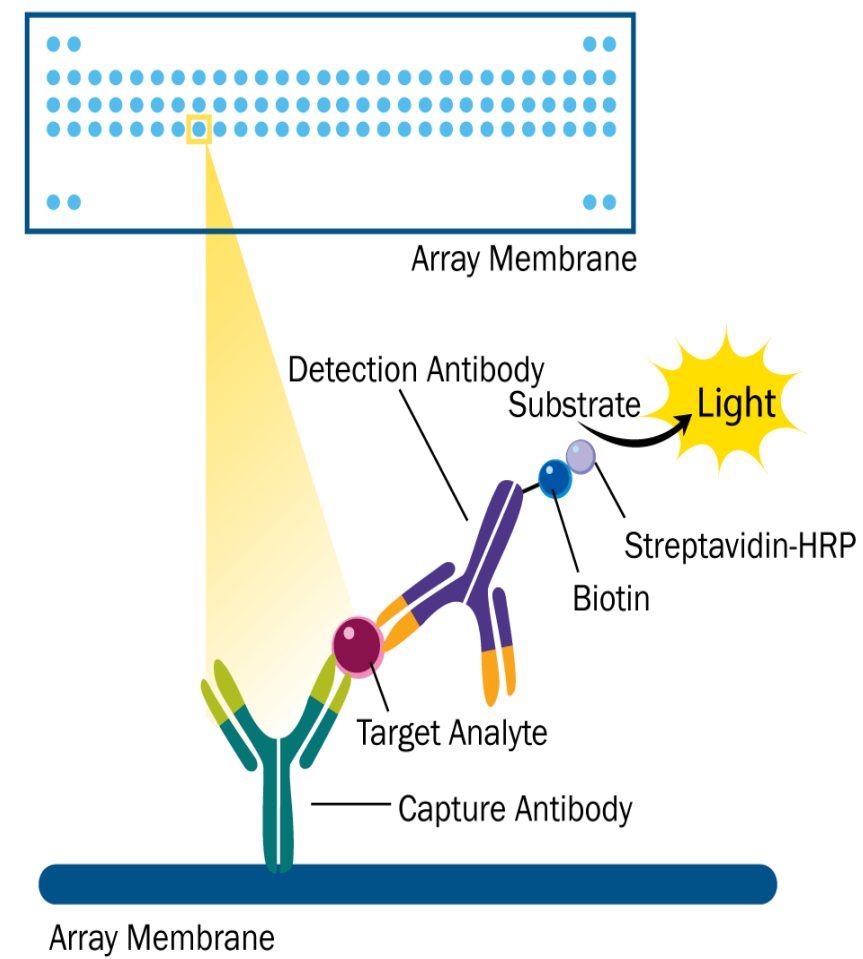
**Methods.** We analysed 3 groups of children with type 1 diabetes mellitus and comparison group of children without diabetes from Regional Children's Clinical Hospital in Sumy. ANPEP was measured by ELISA using a Proteome Profiler Human Kidney Biomarker Antibody Array (R&D Systems, Minneapolis, MN, USA). Results were detected with BioRad ChemiDoc Touch. The arrays were analysed semi-quantitatively, using BioRad Image Lab Software.

# Results

## ANPEP



- non diabetes
- less 1
- 1-5 years
- more 5 years



Proteome Profiler™ Antibody Arrays

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# Conclusions

- Increase urinary ANPEP was observed in the first year of diabetes in children.
- Measuring the level of ANPEP in urine may be useful for the diagnosis of diabetic nephropathy.



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**Erasmus+**

