

Afamin as a diagnostic marker in type 2 diabetes mellitus: a new place under the sun?

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Afamin was established as the fourth member of albumin, α -fetoprotein and the vitamin-D binding protein gene family in 1994 by Lichtenstein *et al.* [1]. It is a 75-kDa glycoprotein with vitamin-E binding capacity, abundant in plasma, but also in ovarian follicular, seminal and cerebrospinal fluids. It is noteworthy that vitamin E and afamin concentrations correlate in cerebrospinal and follicular fluid, but not in plasma [2].

In a previous study by Dieplinger *et al.*, it was found that there is no difference in afamin levels in fasting and non-fasting states; thus afamin concentration can be measured accurately, independently of a patient's fasting state [3].

In a large population-based study conducted by Kronenberg *et al.* it was shown that afamin plasma levels correlated positively with blood glucose levels and prevalence of diabetes mellitus, besides all the other components of metabolic syndrome. This strong correlation of afamin plasma levels and all the components of metabolic syndrome was shown to occur not only at baseline, but also at follow-up. More specifically, an increment in afamin levels measured at baseline by 10 mg/l was associated with a 19% increase in all metabolic syndrome components, while an 8% increase in metabolic syndrome components between baseline and follow-up was observed for each increment in afamin plasma levels per 10 mg/l [4].

Seeber *et al.* documented the prognostic value of afamin plasma levels in women with polycystic ovary syndrome (PCOS), a disease directly associated with the manifestation of metabolic syndrome and type 2 diabetes mellitus, regarding the presence of insulin resistance. Furthermore, women with insulin resistance exhibited higher levels of afamin, regardless of the presence of PCOS. The researchers concluded that afamin serves as a prognostic marker of insulin resistance in young women with PCOS [5].

Finally, the results of a recent pooled analysis involving more than 20,000 individuals, conducted by Kollerits *et al.*, triggered much more enthusiasm regarding the prognostic value of afamin and its wide appliance in clinical practice. Each increase of afamin by 10 mg/l was associated with an increase in prevalence of type 2 diabetes mellitus (odds ratio = 1.19; 95% CI: 1.12–1.26, $p = 5.96 \times 10^{-8}$), while afamin was also found to be positively associated with insulin resistance ($p = 1.37 \times 10^{-23}$). The authors concluded that afamin levels are positively and significantly associated with insulin resistance and prevalence of type 2 diabetes mel-

litus, independently of other major metabolic risk factors, emphasizing this direct prognostic value for the first time in the literature [6].

Based on the above, I would like to emphasize the new era in early diagnosis of type 2 diabetes mellitus with application of afamin plasma levels measurement in clinical practice.

Conflict of interest

The author declares no conflict of interest.

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