I
n a manuscript published in October of 2011, Azenabor et al. reported that in6
creased level of acute phase reactants such
as β2 microglobulin, fibrinogen, lipoprotein (a) and C-reactive protein (CRP) are associated
with number of microvascular complications
in type II diabetic subjects and suggested that
they may play a role in pathogenesis of diabet-
ic complications. Several studies reported that
elevated inflammatory markers are associated
with diabetes mellitus. CRP level is positive-
ly correlated with obesity and insulin resis-
tance. Interestingly, antidiabetic and antihy-
perlipidemic agents can reduce inflammatory
factors in diabetic patients. Plasma inflamma-
tory markers such as CRP and fibrinogen are
higher even in patients with metabolic syn-
drome and it is demonstrated that the number
of metabolic syndrome components are strongly
correlated with serum level of inflammatory
markers. Elevated inflammatory factors in di-
abetic subjects with complications compared to
non-complicated patients have also been do-
cumented. The high sensitive CRP (hsCRP)
level in diabetic patients with presence of di-
abetic retinopathy was higher than patients
without diabetic retinopathy suggesting a link
between inflammation and development of microvascular complications. However, it
seems that effects of inflammatory markers on
diabetic complications are more complicated
and some points should be noted. First, there is
a link between inflammation, antioxidants and
development of diabetic complications. It was
shown that paraoxonase-1 (PON1) activity was
decreased in diabetic patients and PON1/CRP
ratio was also decreased in diabetic patients
with retinopathy compared with those without
retinopathy. Second, endothelial dysfunction
markers should be considered as important
factors in diabetic complications. Targher et al.
indicated that serum von Willebrand factor,
soluble intracellular adhesion molecule-1 (sI-
CAM-1) and hsCRP were unchanged in type I
diabetic patients without complications. They
found that inflammatory markers and endo-
thelial dysfunction markers were significantly
elevated in diabetic patients with complica-
tions compared with those without complica-
tions. Third, some inflammatory markers are
involved during angiogenesis processes. For
example, CRP can modulate angiogenesis and
may be involved in microvascular complica-
tions. Interleukin 6 also stimulates inflamma-
tory cytokine production and involved in tu-
mor angiogenesis. Fourth, the magnitude of
inflammatory markers elevation and presence
of other risk factors should be considered. It is
demonstrated that urinary albumin excretion
higher than 12 mg/24h, hsCRP higher than 3
mg/kg and presence of hypertension are risk
factors for development of microvascular com-
plications in diabetic subjects. Further research
is needed to understand the role and mechan-
ism of inflammation on insulin resistance and
microvascular complications in diabetes.
Conflict of Interests
Authors have no conflict of interests.

References