Abstract:
Diabetes mellitus is associated with disturbed regulation in the microcirculation. A low-grade vascular inflammation has been implicated in the development of diabetes-related vascular complications, but the underlying molecular mechanisms has not yet been fully elucidated. It is known that cyclooxygenase-2 (COX-2) plays a key role in prostaglandin biosynthesis during the development of inflammation. Recent studies revealed that in diabetes increased synthesis of various prostanoids, \textit{via} up-regulation of COX-2, interferes with the regulation of vasomotor function. In this review, we will summarize the current findings regarding the role of COX-2, and COX-2-derived prostanoids in the regulation of vascular tone, as well as the possible underlying mechanisms leading to COX-2 activation in diabetes mellitus.

Key words:
diabetes mellitus, cyclooxygenase-2, thromboxane A$_2$, prostacyclin, arteriolar tone