Pathophysiology of Diabetic Secondary Complication and their Management

Diabetes mellitus is a complicated endocrine metabolic disorder which is caused due to insufficient or inefficient insulin content in our body and it is mainly characterized by hyperglycemia. This metabolic disorder not only affects the carbohydrate metabolic processes but also affects the protein and lipid metabolic processes. The major abnormality in the case of diabetes is not caused due to a higher amount of glucose, but the secondary metabolites which are produced from high amount of glucose or glucose metabolism led to secondary complications of diabetes mellitus [1]. These secondary complications can affect almost all the body organs including the nervous system, heart, eyes, kidney, lower limbs, macro, micro blood capillaries, etc. In fact, these complications have an important impact on the quality of life and life expectancy. Therefore, one of the main goals of diabetes treatment is preventing or delay in the appearance and progression of different complications. However, in recent years, it is evident that diabetes leads not only to vascular complications but also with other complications like non-alcoholic fatty liver disease, cardiomyopathy, dementia, and an increased incidence of different types of cancer [2].

In current thematic issue entitled as “Pathophysiology of diabetic secondary complication and their management”, we have enclosed valued articles discussing the inventions and exploration carried out on the management of diabetes and its complications.

Six exhaustive reviews were included from the experts in the diverse field of drug design, pharmacology and formulation for the pharmacological interventions in the management of secondary complications of diabetes.

Awasthi and colleagues [3] have focussed on one of the major secondary complications of diabetes, that is diabetic foot ulcer. After a very rigorous literature review and analysis, they explained all the available treatment strategies and also the possible way to manage diabetic foot ulcer.

Medicinal plants are known for various bioactive antidiabetic constituents. Generally herbal medicines are safer and they work synergistically a well. Shubham Kumar and his group [4] have very elaborately discussed the herbal medicines and their role in the management of diabetes mellitus.

The major issue in the case of diabetes mellitus is the secondary complications. The glucose is the central biomolecule in the biochemical pathways which takes place in our body. Babel and Dandekar [5] have described in detail all the possible mechanisms which lead to secondary complications. The complication mechanism have been supported with self-explanatory diagrams.

Marco and co-workers [6] have exhaustibly worked and covered all the parts of peripheral arterial disease in the case of diabetics. They have conducted a complete overview and state of the art in the treatment of patients with diabetes, peripheral arterial disease, and foot ulceration and to describe the current challenges and future perspectives.

Grover and their colleagues [7] submitted their article which deals with the pathophysiology of diabetes along with its comorbidities, with a focus on existing and novel upcoming antidiabetic drugs which are under investigation.

The last review of this special issue is submitted by Manimaran and his group [8]. They have shown a nanoemulsion based approach for the antidiabetic drug delivery. There are many drawbacks associated with conventional delivery system like poor absorption and low bioavailability. Nanoemulsion overcomes these drawbacks of conventional delivery system.

I had a great experience and feel pleasure to work with the Director Kazim Baig and his team especially Editorial Assistant Manager Tabinda Hassan. I express our sincere gratitude for them for allowing me to work as the Guest Editors in the journal Current Diabetes Reviews. I hope and wish that this thematic issue will be fruitful for the enormous readership and may assist the researcher as a good information source in the field of diabetes, and its management.

REFERENCES


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