New Cellular, Genetic and Proteomic Tools in the Prevention and Management of Diabetes Mellitus

Aims & Scope:

Diabetes syndrome is defined as a pathological condition characterized by unbalanced blood glucose levels due to the disruption in the cell signaling linked to its main regulator factor, insulin. An initial classification of patients was done according to an impaired insulin body function, thus patients were considered as diabetes mellitus type 1 and diabetes mellitus type 2 patients. Nevertheless, beside to the progression in the knowledge regarding this syndrome new subtypes have been identified and designed. On the other hand, the development of the molecular biology, biotechnology and genetic tools have provided to the scientific community the discovery new molecules and proteins, as well as genes, that have been associated with the development or affect to the progression of this syndrome and, in turn, will force the description of new subtypes of diabetes mellitus. In fact, a wide diversity of the available diagnostic tools, together with a reduction in the economical cost of these molecular and genetic diagnostic procedures, have evoked nowadays that physicians have changed the way of approaching different diseases, and the concept of a personalized medicine is becoming more relevant and it is gaining more support. The base of this new approach to an illness is the elevated information available in the literature regarding the molecular pathways and/or proteins altered, or involved in the development of a particular disease; for instance, the discovery of the regulatory function of certain miRNAs open a new field in the diagnostic of certain diseases such as cancer, so it would do in case of patients suffering diabetes mellitus.

In this special issue we provide a very updated view of new molecular and genetic markers (such as identification of new miRNAs) that can be used for the diagnostic and monitoring the progression of the several complications linked to diabetes mellitus, like thrombosis, kidney failure, neurological complication, etc. Furthermore, we will provide information about the latest diagnostic tools, and/or possible future therapies based on the use of stem cells and antagonirs. We invite investigators and physicians to contribute original research as well as review articles that will help to provide as much information as possible respect to the new genes and proteins involved in diabetes mellitus, which would result in the generations of new diagnostic tools and drugs in order to strength the personalized medicine in patients suffering diabetes mellitus.

Keywords: DM2, new prognostic markers, miRNAs, Protein Kinases, Cell therapy, cardiovascular complication, melatonin.

Subtopics:

1. New potential markers for predicting the development of complications in type 2 diabetes mellitus
2. MicroRNAing or the fine-tuning of MicroRNAs in Diabetes mellitus type 2
3. Relationship between protein kinases and heart disease in diabetes mellitus patients or Methylglyoxal and its relevance to the onset of diabetic cardiomyopathy
4. Hyperglycaemia-Induced Cardiac Contractile Dysfunction in the Diabetic Heart
5. Cell Therapy of Diabetes Mellitus or Using stem cells in peripheral artery disease
6. Cardiovascular complication in diabetes
7. Can tailored therapies improve male reproductive (dys)function associated with diabetes?
8. Melatonin and circadian rhythms in the diabetic state: clinical implications and potential therapeutic applications

Schedule: July 2016