FOREWORD

Drug-resistant epilepsy is defined by the International League Against Epilepsy as "failure of adequate trials of two tolerated, appropriately chosen and used antiepileptic drug schedules (whether as monotherapies or in combination) to achieve sustained seizure freedom". Resistance to epileptic drugs may affect around 30% of patients. This means that more than 20 million people worldwide may face significant consequences (sudden unexpected death in epilepsy, increased risk of injuries, or learning and developmental disabilities at school age). That is why, a continuous search for drugs targeting novel antiseizure mechanisms and alternative ways of epilepsy management is going on.

This book covers a number of valid issues aimed at understanding the etiology and pathophysiology of epilepsy, epilepsy genetics, current therapeutic challenges and possible novel therapeutic targets. The authors point to a number of etiologic factors, for instance acquired (stroke, trauma, infections of the central nervous system) or genetic (missense, nonsense mutations, DNA deletion or duplication, and others). Metabolic or immune factors have been also considered. The involvement of hippocampal sclerosis in the process of epileptogenesis is shown as a key factor in the generation of epileptic brain conditions. The readers may also find a very detailed review of the contemporary management of status epilepticus with antiseizure and non-antiseizure means (ketamine, immunotherapy, or hypothermia). There are also clues on how to inhibit a very dangerous super-refractory status epilepticus. Regarding precision medicine-based management of epilepsy, recent data on $GABA_A$ receptor variants or canonical transient receptor potential channels are provided, which can help develop novel strategies for epilepsy treatment. Ketogenic diet may be considered as a non-pharmacological option for children and adolescents suffering from drug-resistant epilepsy. A chapter on this issue deals with ketogenic diet itself and other nutritional treatments, also focusing on gut microbiome and its relevance in seizure activity.

In my opinion, the book covering various aspects of epilepsy from receptor and genetic studies to therapeutic clues may be of particular value to scientists and clinicians. It is very likely that the data presented will stimulate research aimed at further improvement of therapeutic strategies for epilepsy.

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