Neuroprotection - Drugs, Markets and Companies

Description: This report describes the role of neuroprotection in acute disorders such as stroke and injuries of the nervous system as well as in chronic diseases such as neurodegenerative disorders because many of the underlying mechanisms of damage to neural tissues are similar in all these conditions and several products are used in more than one disorder. Over 500 products have been investigated for neuroprotective effects including those from the categories of free radical scavengers, anti-excitotoxic agents, apoptosis (programmed cell death) inhibitors, anti-inflammatory agents, neurotrophic factors, metal ion chelators, ion channel modulators and gene therapy. Some of the agents are old established pharmaceuticals whereas others are new biotechnology products.

Pathomechanisms of diseases are described with steps at which neuroprotective therapies are directed. Diseases covered include cerebrovascular disorders, traumatic brain injury, spinal cord injury, Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, multiple sclerosis, epilepsy and ischemic optic neuropathy as well as retinal degeneration. Although anesthetics such as propofol are neuroprotective as well, neuroprotection during surgery and anesthesia is discussed with the aim of preventing and treating complications that result in CNS damage.

The report contains profiles of 142 companies that have a neuroprotective product or products along with 120 collaborations. Some of the products in development at academic institutions that do not have a commercial sponsor are also included. Although an up-to-date search of the literature was performed and selected 1,100 references are included. Clinical trials of various neuroprotective agents are described and failures of trials are analyzed with suggestions for improving the selection of drugs and design of trials. The report is supplemented with 77 tables and 16 figures.

Market analysis of currently used products that have a neuroprotective effect are analyzed for the year 2015. Some of these products are approved for other indications but are known to have a neuroprotective effect. With the approval of new products and takeover of markets for obsolete symptomatic therapies, the neuroprotection market value will rise by the year 2020 when it will constitute a major and important component of the CNS market. Forecasts are made until 2025. By that time neuroprotection will be an established part of the neurological practice and measures will be available to achieve this effectively.

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