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Topic: S544 - Anxiety Disorders - from new targets to new treatments

Excitatory-inhibitory dysbalance - a feature of panic?

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With a lifetime prevalence of up to 25% anxiety disorders are among the most frequently occurring psychiatric disorders. In particular, panic disorder with its frequent occurring severe panic attacks, anticipatory anxiety and a variety of somatic symptoms represents an often severe and disabling disorder. Moreover, although effective treatment is available, up to a third of patients do not respond to first treatment offered. Thus, there is still a need for the development of new treatment strategies.

With regard to pathogenic factors, several neurochemical systems and neuroanatomical circuits have been discussed to be involved. In particular, anxiety might be a result of insufficient inhibitory control, pointing towards a major role of the gamma-amino-butyric acid (GABA) system in these disorders. Preclinical and clinical studies discuss a decreased GABAergic inhibition in anxiety and patients with anxiety disorders. In view of these findings it is intriguing that benzodiazepines, which currently represent the most potent and powerful anxiolytic agents, act through an enhancement of GABAergic inhibition targeting the $GABA_A$ receptor. Moreover, there is also evidence for alterations in the glutamatergic system. In addition, recent own research suggests that apart from static alterations also rapid and temporally dynamic changes in excitatory-inhibitory control might be important. As revealed by studies using 3T-MR spectroscopy, a fast and significant increase in glutamate/glutamine concentrations was observed during panic attacks induced experimentally with CCK-4 (Zwanzger et al. 2013; Neuropsychopharmacology 38:1648-54). Moreover, there is some evidence that these mechanisms might be under control of genetic factors.

Finally, it could be suggested that excitatory-inhibitory control mechanisms might represent a promising future therapeutic target taking into account both static as well as temporally dynamic alterations.

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