SUMMARY

The aim of the thesis is to provide an overview of pharmacological and toxicological characteristics of ketamine. Special attention was given to the data related to the developments and current situation with the abuse of the substance in Western population.

Ketamine is a dissociative anesthetic with significant analgesic effects and a broad spectrum of clinical applications, as well as considerable safety in overdose. New applications are being investigated for the treatment of asthma, migraine, and depressions. A number of studies have shown that ketamine affects monoaminergic and glutaminergic neurotransmission. Non-competitive inhibition of NMDA receptors is the most important mechanism of action in the nervous system. However, it also influences opioid, adrenergic, hydroxytryptamine and other receptors and has an impact on the processes mediated by them. To a large extent, the effects of ketamine depend on its enantiomeric form.

Rapidly administered ketamine leads to significant deficits in semantic and episodic memory; long-term administration may be related to prolonged episodic memory deficits. Hallucinations, confusion, nervousness, euphoria, flashback, social introversion, and other symptoms have been recorded. In addition, ketamine may affect certain functions of the cardiovascular, gastrointestinal or musculosceletal systems and ocular functions.

Recently, pronounced sensual and cognitive psychedelic effects of ketamine have led to its increased use as a recreational drug in Western industrialized countries. According to some studies, this increase is regarded as significant and can also be expected in our country. Often, ketamine is combined with other drugs such as methamphetamine, cocaine, alcohol and heroin. The main source of its recreational use is ketamine obtained illegally from clinical supplies. Given the increased ketamine abuse and due to the fact that health-care facilities serve as the most common source of its recreational use it is advisable to consider its legislative classification among narcotic and psychotropic substances also in the Czech Republic.