Chronic sensitization of dopamine D2/D3 receptors by agonist quinpirole (QNP) induces compulsive checking behaviour in rats, which is considered an animal model of obsessive-compulsive disorder (OCD). Previous study revealed deficit in cognitive flexibility in QNP sensitized rats. This thesis focused on determining if this cognitive flexibility deficit is ameliorated by co-administration of clomipramine (CMI), risperidone (RIS) or combination of both (CMI+RIS) to QNP treatment.
Aversively motivated active place avoidance task on a Carousel maze with reversal was used. The number of entrances into a to-be-avoided shock sector was evaluated as measure of performance. Six treatment groups were used: control group, QNP group, CMI group, QNP/CMI combination, QNP/RIS combination and QNP/CMI/RIS combination. Surprisingly, when compared alone, significantly worse acquisition was observed for QNP group compared to control group. However, similarly to previous study, QNP group had a worse performance in a first reversal session compared to control group. When all groups were compared, only QNP/CMI group had worse initial learning compared to control group. In reversal learning, only QNP treated group had a significantly more entrances than control group in first reversal session. Results suggest that co-treatment with CIM reduces overall learning, while co-treatment with RIS or CMI combined with RIS improves reversal learning.