

Anxiogenic effects of chronic exposure to nandrolone decanoate (ND) at supraphysiological dose in rats: a brief report

Gvozden ROSIC¹, Jovana JOKSIMOVIC¹, Dragica SELAKOVIC¹,
Dragan MILOVANOVIC², Vladimir JAKOVLJEVIC¹

¹ Department of Physiology; Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia

² Department of Pharmacology; Faculty of Medical Sciences, University of Kragujevac, Kragujevac, Serbia

Correspondence to: Prof. Gvozden Rosic, MD., PhD.
Department of Physiology, Faculty of Medical Sciences, University of Kragujevac,
Svetozara Markovica 69, Kragujevac, Serbia.
E-MAIL: grosic@medf.kg.ac.rs

Submitted: 2014-10-04 *Accepted:* 2014-11-24 *Published online:* 2015-01-18

Key words: behavior; anxiety; nandrolone decanoate; rats

Neuroendocrinol Lett 2014; **35**(8):703–710 PMID: 25702299 NEL350814A06 © 2014 Neuroendocrinology Letters • www.nel.edu

Abstract

OBJECTIVE: Nandrolone decanoate (ND) is frequently used anabolic androgenic steroid (AAS) among the athletes. Despite the health risks, there is significant increase in prevalence of AAS abuse.

DESIGN: The aim of this study was to investigate the effects of chronic exposure to ND at supraphysiological dose (to mimic the doses for human AAS abusers) on anxiety levels in adult rats.

SETTINGS: We performed several behavioral tests (open field test, elevated plus maze test, beam-walking test, evoked beam-walking test and tail suspension test) for estimation of anxiety in rats. Adult rats received 20 mg/kg intraperitoneal injection of ND weekly for four weeks. Behavioral test were performed on the seventh day after the last dose of ND.

RESULTS: Anxiogenic-like pattern of behavior was clearly observed in several behavioral tests, such as open field test (decrease of total distance moved and cumulative duration of moving, decrease of an average velocity of the animals, decrease of frequency and total time in centre zone); elevated plus maze (decreased total time spent in open arms and the number of entries in open arms of the elevated plus maze); evoked beam-walking test (decreased time to cross the beam) and tail suspension test (increased latency to first immobility and decreased total duration of immobility).

MAIN FINDINGS: Results of this study show that four-week treatment with the supraphysiological dose of ND produced anxiogenic effects in sedentary male rats.

CONCLUSION: Our results show that rats after chronic treatment with a supraphysiological dose of ND exhibited anxiety-like behavior.

Abbreviations:

ND - nandrolone decanoate
AAS - anabolic androgenic steroid
OF - open field
TDM - total distance moved

EPM - elevated plus maze
BW - beam-walking
EBW - evoked beam-walking
TST - tail suspension test

