

ID 1194: Exposure to Alcohol and/or Cadmium Changes Status of Bioelements in Rat Testes

Ana Djuric¹, Aida Begic², Ivana Stevanovic³, Milica Ninkovic³, Mirjana Djukic¹

¹Department of Toxicology, Faculty of Pharmacy, University of Belgrade, Belgrade, Serbia,

²Faculty of Pharmacy, University of Tuzla, Tuzla, Bosnia and Herzegovina,

³Institute for Medical Research, Military Medical Academy, Belgrade, Serbia

INTRODUCTION

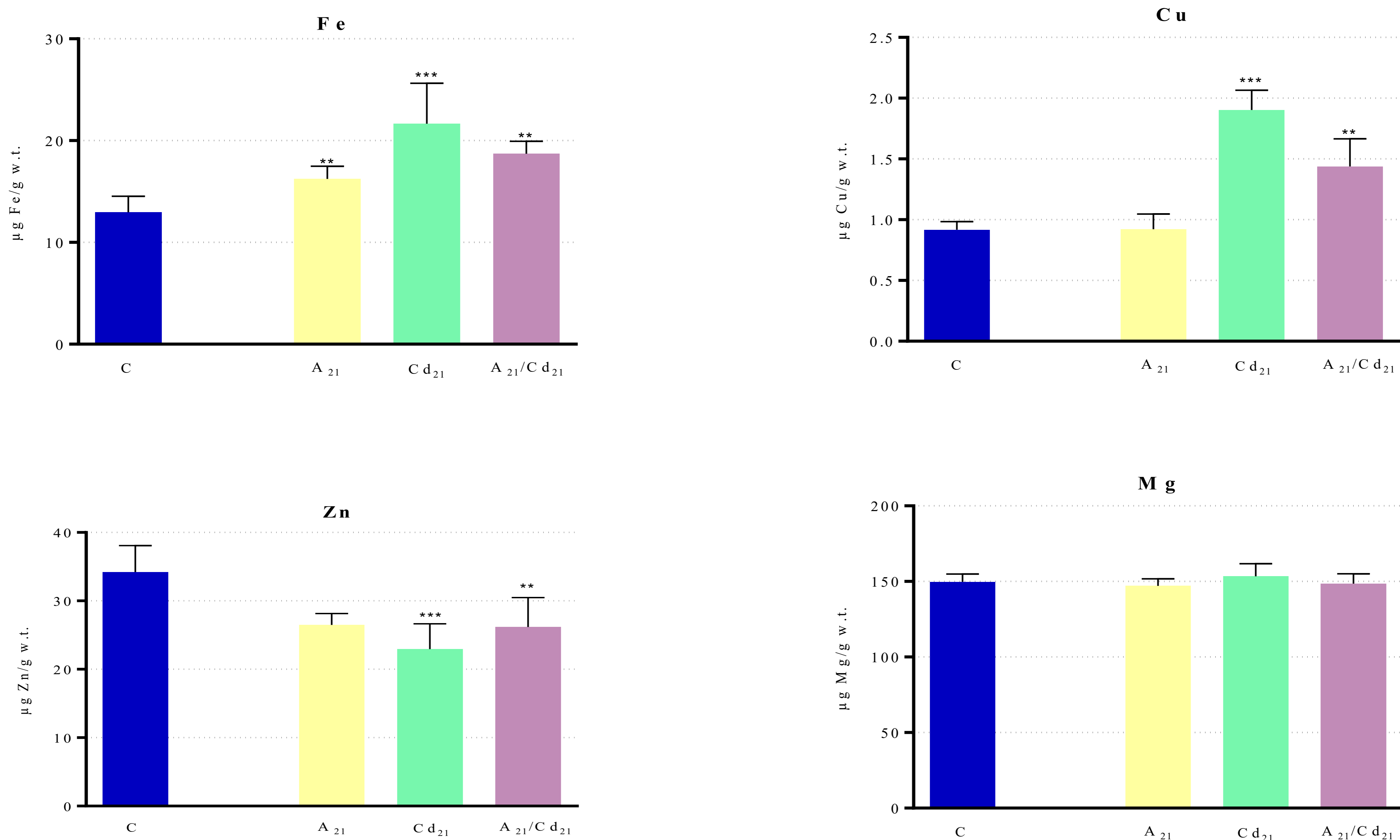
Maintenance of homeostasis of essential metals is of particular importance for the normal development and functioning of living organisms. Interactions between bioelements and toxic metals, which enter the body, disrupt balance of essential metals and consequently functioning of metalloenzymes and intra- and inter- cellular signalization as well.

EXPERIMENTAL DESIGN

Smoking cigarettes is a long-established way of inhalation exposure to cadmium (Cd), thus smokers are on greater health risk. Also, alcoholics are usually smokers. By using animal model (male Wistar rats), we attempted to mimic such circumstances. Particularly, we were focused on the status of bioelements, copper (Cu), zinc (Zn), iron (Fe) and magnesium (Mg) in testes.

For that purpose, we arranged four groups of adult male rats (n=6) and treated them for 21 days: control (C) group – untreated rats, A₂₁ group - received daily 3 mL 20% ethanol/kg *per os*, Cd₂₁ group - 1 mg CdCl₂/kg was administered *i.p.* and A₂₁/Cd₂₁ group – rats were exposed to both tested agents, in the same way.

RESULTS



CONCLUSION

Changed testicular status of bioelements, including Fe, Cu and Zn in rats exposed to A and Cd, implies that male alcoholic smokers might be considered to be at higher risk of impaired testicular function compared to healthy population.

Conflict of interest: The authors declare no conflict of interest.