

Introduction: Pet turtles are known as a source of *Salmonella* infection to humans when handled in captivity. Human cases of salmonellosis are often associated with food, but frequently people become infected by handling infected material such as infected turtles, water and soil.

Materials and Methods: Thirty four turtles purchased from pet shops in Korea were examined to determine whether the turtles and their environment were contaminated with *Salmonella* spp. We studied the isolation rate of *Salmonella* spp. from fecal samples of pet turtles purchased in pet shops as well as water and soil samples in their environment over time.

Results: *Salmonella* spp. were isolated from 17 (50.0%) of 34 turtle fecal samples; positive samples were from 8 of 10 Chinese stripe-necked turtles, 3 of 8 yellow belly sliders, 3 of 6 river cooters, 3 of 4 northern Chinese softshell turtles and no *Salmonella* spp. was isolated from the western painted turtles and common musk turtles. The isolation rate of *Salmonella* spp. increased over time. In other words, on day 2 *Salmonella* spp. was isolated from five water samples and 8 soil samples; however, *Salmonella* spp. was isolated from 14 water samples and 15 soil samples on day 10. This demonstrates that most of the cage environments were contaminated with *Salmonella* spp. over time.

Conclusions: We concluded that a high percentage of turtles being sold in pet shops were infected with *Salmonella* spp., and their environments tend to become contaminated over time unless they are maintained properly. These results indicate that pet turtles could be a potential risk of salmonellosis in Korea.

Acknowledgements: This research was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (NRF-2015R1D1A1A01060638).

References

- [1] Bauwens L, Vercammen F, Bertrand S, Collard JM, De Ceuster S. 2006. Isolation of *Salmonella* from environmental samples collected in the reptile department of Antwerp Zoo using different selective methods. *Journal of applied microbiology*, 101(2), 284-289.
- [2] Benenson A. 1995. *Control of communicable diseases manual*, 6th ed. American Public Health Association, Washington, D.C
- [3] Burnham BR, Atchley DH, DeFusco RP, Ferris KE, Zicarelli JC, Lee JH, Angulo JF. 1998. Prevalence of fecal shedding of *Salmonella* organisms among captive green iguanas and potential public health implications. *J Am Vet Med Assoc*, 213(1):48-50.

P-06

Cigarette smoke exposure impaired maturation of ovarian follicle and normal growth of uterus inner wall of female rats

Hae-Miru Lee¹, Kyung-Chul Choi^{*1}

¹Laboratory of Biochemistry and Immunology, College of Veterinary Medicine, Chungbuk National University, Cheongju, Chungbuk, Republic of Korea

Introduction: Cigarette smoke (CS) is well known to be very harmful to human body functions such as fertility, reproduction, and development. To elucidate the effect of CS on women's fertility more definitely, we examined the histopathological characteristics of the uterus and ovary

Materials and Methods: We received ovary and uterus sample from Korean Conformity Laboratories (KCL), which were obtained from the female rats exposed to the different amounts (low, medium, and high concentrations) of smoke of the standard cigarette (3R4F) for 2h/day and 5 days/week for 28 days according to the OECD guidelines. The animals used for the present study were the spontaneously hypertensive female Wistar Kyoto (WK) rats. We manufactured tissue slides from uterus and ovary samples and evaluated maturation of follicle of ovary and uterus development through H&E and immunohistochemistry (IHC).

Results: It was shown that CS decreased maturation of follicle and abnormal uterus development by CS exposure. In IHC and H&E analysis on ovary tissues, we confirmed that the number of stages of follicles was decreased. (As compared to the non-exposed rats). For uterus, the thickness of inner wall of uterus was decreased by the exposure to CS at low and medium concentrations. In accordance with this result, the expression of PCNA was decreased, but the expression of Bax and CHOP was increased by exposure to CS at low and medium concentrations. However, acute exposure to CS at high level induced the abnormal over-growth of uterus wall.

Conclusions: These results may help elucidate the action of common CS on female rats reproductive organs. The exposure of CS may have a harmful effect on women's fertility and pregnancy by inducing decreased maturation of ovarian follicle and abnormal growth of uterus inner wall.

References

- [1] Dechanet, C., et al., Effects of cigarette smoking on reproduction. *Hum Reprod Update*, 2011. 17(1): p. 76-95.
- [2] Roth, L.K. and H.S. Taylor, Risks of smoking to reproductive health: assessment of women's knowledge. *Am J Obstet Gynecol*, 2001. 184(5): p. 934-9.
- [3] Soares, S.R., et al., Cigarette smoking affects uterine receptiveness. *Hum Reprod*, 2007. 22(2): p. 543-7.

P-07

Identification and characterization of outer membrane vesicles (OMVs) derived from antimicrobial resistant and sensitive *Escherichia coli*

Si Won Kim¹, Seong Bin Park², Se Pyeong Im¹, Jung Seok Lee¹, Jae Wook Jung¹, Tae Sung Jung^{*1}

¹Laboratory of Aquatic animal diseases, College of Veterinary