A survey on *Salmonella* infection in broiler farms around Mashhad city: determination of serogroups and antimicrobial resistance pattern of the *Salmonella* isolates

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Received: 22.02.2017 Accepted: 28.10.2017

Abstract

Zoonotic diseases of food origin such as salmonellosis are among the main economic and health issues in industrialized and non-industrialized countries. Poultry can play an important role in epidemiology and distribution of salmonellosis in humans. The aims of this study were to isolate *Salmonella* from poultry farms around Mashhad city, identify the serogroups and determine the antimicrobial resistance patterns of the isolated *Salmonella*. A total number of 1560 samples were collected from freshly dropped feces of broiler chickens in 23 flocks. Every 10 samples were pooled and processed for *Salmonella* isolation according to standard procedures. Slide agglutination test was used for determination of O serogroups using polyvalent antisera of A to D. Antimicrobial susceptibility of the isolates against 27 agents was determined using standard disk diffusion method. Out of 1560 samples (156 pooled-samples), 30 *Salmonella* isolates were recovered. The results of serological tests identified six serogroup D, one serogroup other than A-D and the rest of 23 isolates as serogroup C. The highest resistance was belonged to colistin, amoxiclav, oxytetracycline, nitrofurantoin, doxycycline, nalidixic acid and the highest susceptibility belonged to fosfomycin, ceftriaxone, cefixime, norfloxacinc and gentamycin. Multi-drug resistance was common among the *Salmonella* isolates. Resistance to at least 2 and at most 18 antimicrobial agents was shown. Nineteen drug resistance patterns were found. The results of this study showed the presence of *Salmonella* infection among broiler chickens in Mashhad region and the occurrence of antimicrobial resistance among the isolates.

Key words: *Salmonella*, Antimicrobial resistance, Broilers, Mashhad

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