PLASMID-MEDIATED COLISTIN RESISTANCE IN SWINE FARMS

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The emergence of colistin resistance among gram-negative bacteria is of serious concern worldwide. Since 2016, colistin was formally prohibited for use as a growth promotor in swine farm in Thailand. The study updated antimicrobial resistance (AMR) profiles of *Escherichia coli* in swine farms with different antimicrobial usage and distribution of plasmid-mediated colistin resistance genes, namely, *mcr-1* and *mcr-2*. Of 343 samples taken from four swine farms in central Thailand, 83% were *E. coli*-positive while 23% were *Salmonella*-positive. Two hundred and one *E. coli* isolates were randomly chosen from each group of samples for MIC analysis of 17 antimicrobial agents mainly used for human therapeutics, together with detection of extended spectrum beta-lactamase (ESBL). The resistance rates were 0% for amikacin, 4% for amoxicillin/clavulanic acid, 21% for cefotaxime, 6% for cefoxitin, 1% for cefoperazone/sulbactam, 19% for cefpirome, 19% for ceftazidime, 23% for ciprofloxacin, 49% for colistin, 0.5% for doripenem, 32% for gentamicin, 0.5% for imipenem, 0.5% for meropenem, 18% for moxifloxacin, 2% for netilmicin, 1% for tigecycline, 53% for trimethoprim/sulfamethoxazole, and 17% for ESBL producers. The MIC of colistin resistance is significantly different among the farms (p <0.01). Of 99 colistin-resistant *E. coli*, 64% carried *mcr-1* and 34% *mcr-2*.

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One Health Operation Research under THOHUN Research Grants