ID der Kurzfassung : **228**

The accumulation of antimicrobial resistance genes in a wild chimpanzee population over seventeen years.

Inhalt

The selective pressure exerted by the massive use of antibiotics has led to a rise in antimicrobial resistance (AMR), posing a serious global health problem. This issue is particularly concerning in many regions of Sub-Saharan Africa, where easy access to antibiotics without a prescription and frequent self-medication foster the emergence and spread of antibiotic resistance genes (ARGs). This environment is conducive to the selection and transmission of resistant bacteria, which can affect not only human health but also that of animals and surrounding ecosystems. However, understanding the actual impact of human activity on the spread of resistance genes requires overcoming a major challenge: the difficulty of distinguishing natural from acquired resistance. Here, we use a longitudinal approach to test whether the observed increase in AMR among humans and livestock in West Africa was accompanied by a flow of ARGs into wild chimpanzees (Pan troglodytes verus), our closest genetic relatives, in Taï National Park (TNP), Côte d'Ivoire,the largest remaining fragment of primary forest in West Africa. We analyzed 410 fecal samples from three groups (NEast = 9; NNorth = 15; NSouth = 17 years), collected over a 17-year period, using hybridization capture and high-throughput sequencing to screen for more than 2,000 ARGs to assess ARG richness and resistance type diversity. Both the abundance of ARGs and the diversity of antimicrobial resistance classes increased; we detected ARGs conferring resistance to drugs of high clinical importance (fluoroquinolones, peptides, aminoglycosides, beta-lactams, glycopeptides, glycylcyclines, macrolides, rifamycins, streptogramins, tetracyclines) and moderate importance (diaminopyrimidines, sulfonamides, lincosamides, phenicols, phosphonic acids, sulfonamides), providing strong evidence for ARG flow into this isolated population.

Keywords

antimicrobial resistance (AMR); antibiotic resistance genes (ARGs); wild chimpanzees (Pan troglodytes verus); hybridization capture and high-throughput sequencing.

Registration ID

OHS25-68

Professional Status of the Speaker

PhD Student

Junior Scientist Status

Yes, I am a Junior Scientist.

Track Klassifizierung: AMR

Typ des Beitrags: Both options possible

Kommentare:

I would prefer to give an oral presentation, but if that is not possible, then a poster.