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Prevalence and risk factors of *Helicobacter pylori* among adults at Jinka zonal hospital, Debub Omo Zone, Southwest Ethiopia

Getnet Hailu¹, Kassu Desta² and Fisihatsion Tadesse²

¹Jinka Zonal Hospital, Ethiopia

²Addis Ababa University, Ethiopia

Background: Nearly 50% of the world's population is estimated to be infected with *H. pylori* but the prevalence varies greatly among countries and among population groups within the same country. The overall prevalence of *H. pylori* infection is strongly correlated with socio-economic conditions.

Objective: To determine the prevalence and the possible risk factors for *Helicobacter Pylori* infection among adults at Jinka Zonal Hospital, Debub Omo Zone, Southwest Ethiopia.

Methods: A hospital based cross-sectional study was conducted among 349 adults from December 2012 to February 2013. All Stool specimens were screened for fecal *H. pylori* antigen. Besides, all participants were interviewed using structured questionnaire.

Results: A total of 150 (43%) males and 199 (57%) females were involved in the study. The age of participants were ranged between 20-89 years with a mean age of 36.7±14.7 and median 32 years. The overall prevalence of *H. pylori* infection was 50.7% (177/349). *H. pylori* infection were positively associated with those whose occupation were agrarians (OR=1.85 (95% CI 1.02-3.39, p=0.045); being male (OR=1.98 (95% CI 1.42-3.29, p=0.011), more than 5 persons living in the same house, [(OR=1.53(95% CI 1.00-2.34, p=0.048)]; those practiced open field defecation/no toilet use, (OR=6.75 (95% CI 2.11-21.61), p=0.001); those who never wash their hands after toilet, (OR=2.86 (95% CI 1.30-3.27, p=0.009). But a minimum alcohol consumption was negatively associated with *H. pylori* bacteria, (OR=0.39 (0.23-0.67, p=0.001).

Conclusion & recommendation: The overall prevalence of *H. pylori* infection in Debub Omo Zone was 50.7%. Poor hygienic practices and crowding were positively associated with *H. pylori* infection. On the other hand, consumption of little alcohol might protect infected against *H. pylori* bacteria. Increasing the awareness of the communities toward good hygienic practices might reduce the transmission of *H. pylori* infection.

getnethailu21@gmail.com

Unraveling the mechanistic details underlying the antimicrobial and antibiofilm activity of metal compounds

Joe A Lemire¹, Lindsay Kalan², Alexandru Bradu¹ and Raymond J Turner¹

¹University of Calgary, Canada

²Exciton Technologies Inc., Canada

Historically metals have been used as antimicrobials to prevent and control infectious disease. An increase in the prevalence of antibiotic resistant microorganisms in addition to a decrease in the emergence of novel antimicrobial therapeutics has once again brought metals to the fore as potential options to treat infectious diseases. Recently, we described the antimicrobial and antibiofilm activity of various silver and copper compounds including a silver salt with previously undiscovered antimicrobial activity-silver oxynitrate. Indeed, silver oxynitrate eradicated both lab and clinical strains of *E. coli*, *P. aeruginosa* and *S. aureus* including antibiotic resistant strains namely methicillin-resistant *S. aureus* and Fluoroquinolone-resistant *P. aeruginosa* at concentrations lower than other tested metal compounds. Now, our aim is to provide a mechanistic understanding of how metal compounds eradicate planktonic and biofilm populations of microorganisms. To study this, we have screened a mutant library of *E. coli* (the Keio collection) for silver resistant and sensitive strains. Not surprisingly, our preliminary findings suggest that silver toxicity cannot simply be described by an imbalance cellular ROS.

jalemile@ucalgary.ca