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Topic: Community health and nutrition programs

Title: Sub-clinic inflammation a factor associated with both cardio-metabolic risk factors and micronutrient deficiencies in adults of Ouagadougou; Burkina Faso

Presentation Type: Oral

Introduction: Increasing evidence suggests that high sensitivity C-reactive protein (hsCRP) is associated with cardio-metabolic risk factors (CMRF) while being related to micronutrient deficiencies.

Method: As part of a project on the double burden of under and over-nutrition in sub-Saharan Africa, we assessed the relationship between hsCRP with both cardio-metabolic risk factors and micronutrient deficiencies in a population-based cross-sectional study carried out in the Northern district of Ouagadougou, the capital city of Burkina Faso. We randomly selected 330 households stratified by income tertile. In each income stratum, 110 individuals aged 25-60y and having lived in Ouagadougou for at least six months were randomly selected, and underwent anthropometric measurements and blood sample collection.

Results: The prevalence of high hsCRP was 39.4% without sex difference. Vitamin A deficient subjects (12.7%) exhibited significant odds of elevated hsCRP (2.5; $p = 0.015$). Serum ferritin was positively correlated with log hsCRP (0.194; $p=0.002$). The odds of elevated hsCRP was significant in subjects with BMI ≥ 25 (6.9; 95% CI, 3.6, 13.3), abdominal obesity (4.6; 95% CI, 2.2, 7.3), and high body fat (10.2; 95% CI, 5.1, 20.3), ($p<0.001$ respectively). Independent predictors of hsCRP in linear regression models were WC ($\beta = 0.306$; $p = 0.018$) and serum triglycerides ($\beta = 0.158$; $p = 0.027$). In this sub-Saharan population, hsCRP was consistently associated with adiposity.

Conclusion: Assuming that plasma hsCRP reflects future risk of cardiovascular events, intervention, which reduces CRP, or chronic and acute nutrition conditions associated with it, could be effective in preventing their occurrence particularly in sub-Saharan Africa.