The Use of Benzoyl-Dl-Arginine-Naphthylamide (Bana) Test as A Screening Test for Mother at Risk for Delivery of Pre-Term and Low Birth Weight in A Rwandan Population

Claude Bayingana
College of Medicine and Health Sciences
University of Rwanda,
Huye, Rwanda

Charles Karangwa
College of Medicine and Health Sciences
University of Rwanda,

Jean Kalibushi,
Butare University Teaching Hospital
Huye, Rwanda

Julien Gashegu
College of Medicine and Health Sciences
University of Rwanda,
Huye, Rwanda

***Abstract*- Oral infections can act as the site of origin for dissemination of periodonto-bacteria and their toxins as well as induce inflammatory mechanisms to distant body sites, thus linking periodontal diseases to pre-term delivery of low birth weight (PLBW) infants. Periodontal disease is an infection of the tissues surrounding and supporting the teeth. Researchers showed that between 18 and 50 % of all pre-term deliveries are associated with periodontal disease. Porphyromonas gingivalis, Treponema denticola and Tannerella forsythia are among the subgingival microflora most frequently associated with periodontal disease. The presence of these bacteria can be identified by their ability to hydrolyse BANA. BANA is a rapid and effective diagnostic aid shown to correlate well with the clinical indices used to diagnose periodontal disease. The objective of this study was to investigate the association between the presence of member of the red complex (BANA positive species) in subgingival plaque and pre-term delivery of low birth weight in a Rwandan population. Three clinical indices (PI,GI and PD) were measured for each patient. Plaque sample were collected by inserting a sterile probe into the base of the pocket and this served for the measurement of the BANA enzyme test. The age of the population study was between 18 and 47 years with a mean of 30.8 (± 5.34). Among the 450 women examined, 57.1 % had a PI score of 2, 56.0 % had GI score of 2 and 89.6 % had a PD between 4-6 mm. At a level of 5%, a significant association of p-value=0.000 was found between PI vs BANA, GI vs BANA and PD vs BANA. No significant association (p-value=0.073) was found between BANA and mothers who delivered preterm of low birth weight (PLBW). In conclusion, findings of this study showed that BANA cannot be used for now as screening test for mother at risk for preterm delivery, while waiting for a multicenter study which will help to verify the cause of these discrepancies of results. In the other hand we can recommend BANA to be used as a routine test for the detection of periodontal disease due it strong relationship with clinical indices used to diagnose periodontal disease.**

Keywords: **Benzoyl-Dl-Arginine-Naphthylamide (Bana) Test, Screening Test for Mother, Risk for Delivery, Pre-Term and Low Birth Weight**

IJHM

This is an open access article under the CC BY-SA 4.0 license (https://creativecommons.org/licenses/by-sa/4.0/)