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## Study of chronic periodontitis in rheumatoid arthritis patients and its relation to serum ACPA levels

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**Background:** Periodontitis might have a direct role in initiating and sustaining the immunoinflammatory responses in RA.

**Aim:** To determine the prevalence of chronic periodontitis in a cohort of Egyptian RA patients and their 1<sup>st</sup> degree relatives (FDR) compared to controls and its relation to serum anticitrullinated peptides antibodies (ACPA).

**Materials & Methods:** Group-I included 100 RA. Group-II included 50 FDR free of clinical joint disease; Group-III included 50 matched controls. DAS28 and HAQ were applied for all RA. Dental examination for all subjects including: Probing Pocket Depth (PPD), Clinical Attachment Loss (CAL), Plaque Index (PI) and Modified Gingival Index (GI). ACPA in serum was done for Groups-I and II, Group-III with periodontitis.

**Results:** Group-I had significantly more periodontitis than II and III; a statistically significant difference between Group-I and II in PPD, CAL and PI and between Groups-I and III in PPD, CAL and PI. In group-I, 82% had positive ACPA ( $\geq 20$  U/ml), compared to only 8% in group II and 0% in group III. There was a significant difference in serum ACPA between Groups-I and II and I and III.

**Conclusion:** Our study shows that individuals with RA are more likely to experience periodontitis.

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## Develop the first ELISA kit detecting melamine residues in feed and milk products in Vietnam

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The adulteration of melamine into food is banned but its misuse have been widely reported in milk products and animal feed. The development of a rapid screening immunoassay for monitoring these substances is an urgent requirement. In this research, a hapten of melamine was successfully synthesized by introducing three carbon chain length spacer arm via a reaction between 6-aminocaproic acid and 2-chloro-4,6-diamino-1,3,5-triazine (CAAT). The molecular structure of this hapten was identified by H1 nuclear magnetic resonance spectrometry. An immunogen was prepared by coupling this hapten to Keyhole limpet hemocyanin (KLH). An enzyme conjugated was prepared by coupling synthesized hapten to Horseradish peroxidase (HRP). A direct competitive ELISA (cELISA) was developed to evaluate assay performance. The results showed that high titer polyclonal antibodies were obtained and the performance of this cELISA kit showed good specification:  $IC_{50}$ : 230 ng mL<sup>-1</sup>, LOD: 8.3 ng mL<sup>-1</sup> and LOQ: 10 ng mL<sup>-1</sup>. Regarding selectivity performance, no obvious cross-reactivity to common compound was found. This data show that this ELISA kit met the requirement of melamine maximum residues level (1000 ng mL<sup>-1</sup> in milk products, 2500 ng mL in animal feed) and could be use in an immunoassay for the rapid and sensitive detection of this banned chemical.

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