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C-reactive protein as an early marker of opportunistic infections in HIV

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Opportunistic infections account for the majority of death in untreated patients with AIDS. CRP is a highly sensitive marker of infection & inflammation and its level increase with infection. The present study was undertaken among 100 HIV+ patients, at ART center Victoria Hospital Bangalore. With the informed consent of the patient, a generalized proforma was filled up consisting of patient's clinical presentation and diagnosis. Their CRP level and CD4 count were measured. 56 HIV+ patients were asymptomatic and acted as control giving a negative test for CRP (<6 mg/l), showing no base line rise in CRP. Patients with infectious diagnosis showed a positive test for CRP, while patients on treatment were negative. Among the infectious cases, bacterial infection showed high level of CRP (mean 32 mg/l) compared to viral/fungal infection (mean 9 mg/l). Combinations of opportunistic infections produced a high level of CRP (mean 45 mg/l). A graph of CRP along x-axis and CD4 count along Y-axis were plotted which showed a negative correlation (r=-0.2324, p<0.01 and lzl=2.40). From the graph, the CRP level at which ART can be started is >92.413 mg/l [taking <200 (cells/µl) as the CD4 count at which ART is started]. Patients showing negative test for CRP need not be started with ART, as their CD4 count is found to be approximately 329 cells/µl. CRP level in HIV patients has a prognostic significance and can be used as an early marker of opportunistic infections.

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Begomovirus diversity and its management

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The major constrain to economically important crops are the diseases caused by genus *Begomovirus*, which are transmitted by the whitefly vector *Bemisia tabaci*. Viruses of this genus are widely distributed in the non-cultivated plants and serve as progenitors of crop-infecting viruses. The *Begomovirus* has the high capacity for recombination, mutation and acquisition of new DNA components and satellites. Identification of plant viruses, monitoring for new viral diseases, understanding the vectors that transmit viruses, and determining viral and vector impacts on the growth and development of crop cultivars and lines is vital to managing and controlling these diseases. In addition to damaging crops and causing yield losses, plant viruses interact with vectors and other diseases to increase the damage from the diseases/pests. The crops and weeds growing close to the crop fields are potential reservoirs of *Begomovirus*, but it is not known whether the same viruses infect several host species or coinfect any of the hosts. This increases the difficulty of controlling both the plant virus and the interacting pathogen or vector. Significant interaction between plant viruses and other diseases vital to agriculture is a major goal. Expression of various full length or truncated or defective proteins of the virus has been effective in accomplishing pathogen-derived resistance. Antisense RNA and RNAi technology have also been used with some success.

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