POTENTIAL USE OF NS1 AG STRIPS TO DETECT DENV INFECTION IN FIELD COLLECTED FEMALE *AEDES AEGYPTI* MOSQUITOES FROM DENGUE HIGH RISK AREAS IN COLOMBO DISTRICT.

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Dengue has become the major mosquito borne viral infection in Sri Lanka. Prevention and control of dengue relies heavily on surveillance and vector control. Since entomological and human-virological surveillance is less effective in predicting outbreaks, virological surveillance of dengue vectors has now become an area of interest. Potential of dengue NS1 Ag strips (Standard Diagnostic Inc. Korea) to detect dengue virus (DENV) infection in field caught adult, female *Aedes aegypti* mosquitoes from selected dengue high risk areas in Colombo District was examined in the study.

Three areas (Maharagama, Boralesgamuwa, Nugegoda) were selected. Mosquitoes were collected daily, identified and stored in – 80 °C for NS1 antigen detection. Sampling of mosquitoes was carried out during the period of dengue outbreak (May, 2014) in Maharagama, whereas it was carried out in Boralesgamuva (March, 2014) and Nugegoda (April, 2014) during the period just after a dengue out break. Heads and thoraxes of mosquitoes were separated, homogenized (as singles, pools of 8-10 mosquitoes) with PBS and each homogenate was used on NS1 Ag strip. Laboratory infected and uninfected *Ae. aegypti* mosquitoes were tested as controls.

Study revealed the presence of NS1 antigen in field collected mosquito samples, from single mosquitos: 41% (n=24), 36% (n=22), 19% (n=31) and from pools: 2 of 5, 1 of 3 and 2 of 5 respectively of Maharagama, Boralesgamuwa, and Nugegoda. Results illustrated the presence of DENV infected *Ae.aegypti* vectors in three sites. Study confirmed the potential use of NS1 strips for detection of DENV in *Ae.aegypti* for the first time in Sri Lanka, as a rapid approach that can easily be used under field conditions with minimal training. The study suggests, adult mosquito screening for NS1 Ag, as a practical approach that provide promising results in risk assessment for DENV transmission in Sri Lanka.

Keywords: *Aedes aegypti*, NS1 antigen, NS1 antigen strip