

FACULTY OF MEDICAL SCIENCES
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Abstract Book



Role of serum cytokines as potential biomarkers in acute dengue infection

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Objectives: Serum IL-10, Macrophage inhibitory factor (MIF) and interferons have been found to be associated with fatal dengue. We set out to investigate the possibility of using these cytokine as biomarkers to predict severe dengue.

Methods: Serum IL-10 levels were determined by quantitative ELISA in 215 adult patients with confirmed acute dengue infection (ADI). Serum IFN α and IFN γ levels were done in 79 patients. Serial recording of clinical features and laboratory investigations were done to determine clinical disease severity.

Results: 33 (17.46%) patients were classified as severe dengue (SD). Serum IL-10 levels were significantly higher ($p=0.0034$) in patients with SD (median=121.9, range=24.98 to 3271 pg/ml) when compared to those with non SD (median= 78.28, range= 7.18 to 343 pg/ml). In the 29 patients with paired serum samples, serum IL-10 levels rose in all 6 patients with SD whereas in 20/23 patients with non SD, serum IL-10 levels fell in the critical phase. Although serum MIF values were higher in patients with SD (mean 70774, $D\pm$ 59874 pg/ml) when compared to those with non SD (mean 45362, $SD\pm$ 26891 pg/ml), this was not statistically significant. The IFN γ levels were significantly higher ($p=0.038$) in patients with shock (median= 77.55, range= 18.21 to 468.4 pg/ml) when compared to those who did not develop shock (median= 35.25, range= 4.050 to 733.1 pg/ml).

Conclusion: Serum IL-10 levels appear to be associated with SD. It would be crucial to investigate the possible role of this cytokine in the pathogenesis of SD.

DP 2

Seroprevalance of dengue viral infections and serotype specific T cell responses in healthy individuals in Colombo, Sri Lanka

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Objective: Although dengue viral infections cause dengue haemorrhagic fever and fatalities in some individuals, it is a mild/asymptomatic infection in the majority of infected individuals. Therefore, we set out to determine silent dengue transmission in the community.

Methods: 236 healthy individuals aged 5-80 years recruited from community to test the presence of anti-dengue virus (DV) antibodies. *Ex vivo* and cultured ELISpot assays for serotype specific (SS) DV peptides, DEN3 NS3 and non-dengue viral peptides were done in 47/263 individuals. Cultured ELISpots for SS responses done in 3 individuals <20 years, in 20 for 20-40 years age and 24 aged >40 years.

Results: The seropositivity rates for DV-specific antibodies were 40%,62.5%,100% at 10,20,40 years of age respectively. A significant ($p=0.001$) and positive correlation observed with age and DV- seropositivity (Spearman $r=0.8365$,95%CI 0.55-0.95). SS T cell responses detected in all seropositive individuals ($n=44$) but absent in all dengue seronegative ($n=3$) individuals.

SS responses seen in only 1 person of the <20 age group who responded to SS peptides of DEN-2. 3/20(25%), 6/20(40%), 3/20(25%) and 5/20(30%) of individuals between 2-40 years responded to at least one SS peptide of DEN-1, DEN-2, DEN3 and DEN-4 peptides respectively. 12/24(50%), 5/24(33%), 12/24(50%) and 6/24(25%) of individuals aged >40 years responded to at least one SS peptide of DEN-1, DEN-2, DEN-3 and DEN-4 peptides respectively.

Conclusions: Seropositivity rates to the DV significantly rises with age, almost 100% at 40 years of age. The SS T cell responses to DEN-1 and DEN-3 SS peptides were more frequent aged >40 years.

DP 3

Are the health care workers geared to prevent H1N1 in the future?

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Objective: Our aim was to assess the knowledge on transmission and prevention of H1N1 influenza among health care workers who play a fundamental role in the community.

Methods: We selected Colombo South Teaching Hospital as the study setting to conduct a descriptive cross sectional study. The expected proportion of adequate knowledge was taken as 50% and at 0.05 precision with a non-respondent rate of 10% a study sample of 406 nurses was obtained. A self-administered questionnaire aided in seeking information on socio-demographic details, knowledge and attitude regarding H1N1. Significance level was set at $p < 0.05$ and tested using Chi-square.

Results: Majority knew nasal secretions 338(83.3%) and infective saliva 308(75.9%) as modes of transmission of H1N1 and their mean score was $8.37(S.D \pm 1.53)$ out of 10. Higher percentages of the study sample knew about hand hygiene 375(92.4%), facial masks 391(96.3%), and patient isolation 344(84.5%) as effective means of prevention. A proportion of 80.5% ($n=327$) also knew that vaccine is a preventive method and their knowledge on its efficacy had a significant association with vaccination ($p=0.001$). However 55.9% ($n=227$) have not been vaccinated due to side effects of the vaccine. The practices on both transmission of H1N1 ($p=0.171$) and prevention of H1N1 had no significant association with their actual knowledge ($p=0.268$).

Conclusion: Despite the knowledge their practice of prevention as health care workers was inadequate. Therefore the necessity arises to identify areas in which improvement can be made with the purpose of getting them efficiently and confidently involved in disease prevention.

OP 4

Relationship between asymptomatic anicteric hepatitis and asymptomatic myositis in a cohort of adult Sri Lankan dengue patients admitted to a medical unit of a tertiary referral centre

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Objective: To study the relationship between asymptomatic anicteric hepatitis and asymptomatic myositis in a cohort of adult Sri Lankan dengue patients admitted to a medical unit of a tertiary care centre.

Methods: Case notes of 88 consecutive confirmed dengue patients admitted to the principal authors unit at Sri Jayewardanapura Teaching Hospital, Kotte, Sri Lanka from January 2012 to June 2012 were retrospectively analyzed to obtain the required information. Clinical criteria defined for suspected dengue fever were a confirmed viral infection with a platelet count less than 100000/cumm³ during the epidemic.

Results: Age ranged from 13 to 64 years with a mean age of 28.6 ± 8.62 SD. Sex distribution was male:female = 56:32 (6:4). An elevated AST level (>37 u/l) and elevated ALT level (>40 u/l) were found in 95% and 90.9% of the instances respectively. AST levels were above ALT levels in 86.2% of the instances. Elevated CPK levels were seen in 87.5% patients. There was no linear relationship between asymptomatic transaminitis and elevated CPK levels. Hypocalcaemia was noted in 72% as described in the literature, without any relationship to either transaminitis or myositis.

Conclusions: Immunological mechanisms resulting in anicteric hepatitis and asymptomatic myositis in dengue seem to differ. Elevation in AST and ALT levels seem to differ from other viral infections mimicking what is seen in acute alcoholic liver disease. The role of hypocalcaemia was uncertain.

OP 5

Comparison of risk factor profile, severity and outcome between lacunar strokes and other ischaemic stroke subtypes

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Objective: Lacunar infarcts are a frequent type of stroke caused mainly by cerebral small-vessel disease. Because of this, lacunar infarcts are likely to behave differently from other ischaemic stroke subtypes and may require a different approach in their management. Objective was to describe the differences in risk factor profile, severity and outcome between lacunar and other ischaemic stroke subtypes as this aspect had not been studied in Srilankan patients.

Methods: This prospective descriptive study included 70 patients with acute ischaemic strokes admitted to Colombo South Teaching Hospital during 01/06/2012 to 10/09/2012. Severity of the stroke was assessed by using The National Institutes of Health Stroke Scale (NIHSS). Assessment of the outcome was done by estimating disability using Modified Rankin Scale (MRS) by contacting the patient via telephone after one month of hospital discharge.

Results: In this period of time 46 patients with lacunar strokes and 26 with other types of ischaemic stroke were evaluated. Hypertension (58.7% Vs 54.2%) and diabetes mellitus (45.7% Vs 45.8%) were equally common in lacunar and non lacunar stroke. Hypercholesterolemia (32.6% Vs 12.6%) was more frequent in lacunar stroke and chronic atrial fibrillation (4.2% Vs 2.2%) was more frequent in non lacunar stroke patients. Regarding severity, 56.5% of lacunar stroke patients had minor stroke (NIH stroke scale 1-4)

Results: Response rate was 100% and 53.9% of participants were males. Knowledge of H1N1 infection was significantly different among students in four faculties. 43.5% of the participants had average knowledge and 81.2% of them knew correct mode of transmission of the H1N1 infection. Among the participant who had high awareness of preventive measures from medical faculty (61.5%). Only 12.3% of the participants used face masks during the pandemic episode and 63.8% of them did hands washing. Among the study group 48.2% had not used face masks as they did not like that practice. Almost half of the students who do not use handkerchief were used elbow joint to prevent droplet infections when they sneeze or cough during endemic season. 65% students had not practice hand washing and use elbow joint to prevent droplet infections due to lack of awareness.

Conclusion: Student's knowledge on H1N1 infection was average. Awareness of preventive measures was high level among Faculty of Medical Sciences. Preventive practices were at low percentage in all the faculties.

PP 6

Knowledge and practices related to standard precautions among medical laboratory technologists in tertiary care hospitals in Sri Lanka

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Objective: To describe knowledge and practices related to standard precautions among Medical Laboratory Technologists (MLTs) in tertiary care hospitals in Sri Lanka.

Methods: This descriptive cross-sectional study was conducted among 204 MLTs in six randomly selected tertiary care hospitals (3 state sector and 3 private sector) in Western Province. A self-administered structured questionnaire and a structured observation checklist were used for data collection. Scores were assigned to responses and were used to determine the level of knowledge and practices.

Results: MLTs of both state and private sectors had good knowledge (mean knowledge scores 188.22 and 182.64, respectively) and reported good practices (mean practice scores, 72.89 and 85.18 respectively). However, observations showed that wearing protective devices (clothes and gloves) was relatively poor in state sector (8% and 38%, respectively). Undesirable habits such as eating and drinking inside the laboratories were common in both sectors. Facilities provided to MLTs in both sectors for them to follow standard precautionary practices were not optimal, and were comparatively poorer in state sector.

Conclusions: MLTs in both state and private sectors have a good knowledge regarding standard precautions. Overall practices regarding safety precautions are much higher among MLTs in private hospitals than those in state hospitals, probably resulting from better availability of relevant facilities in private sector. Facilities provided for the MLTs in state sector needs improvement to enable them to practice standard safety precautions.

PP 7

Aetiology of superficial fungal infections among cleaning staff at University of Sri Jayewardenepura

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Objective: Superficial fungal infections (SFIs) are the infections of the keratinous tissue caused by dermatophytes, yeasts and non-dermatophyte fungi. Cleaners are identified as a risk category for the SFI as they are frequently exposed to moist environment. To determine the etiological agent causing SFIs among cleaning staff at Sri Jayewardenepura University.

Methods: Eighty cleaners were included in the study. Fifty six were clinically suspected for SFIs. Laboratory identification was done using direct microscopy with 10% KOH or Gram stain followed by culture on Sabouraud's Dextrose Agar with or without 0.05 mg/ml Chloramphenicol at 25°C- 30 °C aerobically for three weeks. Speciation was done using morpho physiological methods.

Results: Forty one (51.2%) had SFIs. Out of the 56 clinically suspected cases 76 specimens were collected from different infected sites. Out of 65 scrapings and nail clippings, 45 (69.2%) were KOH positive while 4 (6.1%) were identified as *Pityriasis versicolor* by KOH. Sixteen (24.6%) were negative for KOH. Out of KOH positive specimens only 28 were culture positive while 17 were culture negative. *Aspergillus niger* was the commonest organism isolated from these specimens (20) followed by the non albicans *Candida spp.* (7), *Candida albicans* (2), dematiaceous fungi (7), *Pityriasis versicolor* (4), *Fusarium spp.* (3) and dermatophyte species.

Multiple fungal species were isolated in 4 specimens.

Conclusions: *Aspergillus niger* was the commonest pathogen causing SFIs among the study group followed by non albicans *Candida spp.* Regular examination of this population is recommended because they are at high risk for fungal diseases.



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The paper titled

..... Aetiology of Superficial Fungal Infections among Cleaning Staff at University of Sri Jayewardenepura

by Rajakulasooriya RSR, Perera WPSSS, Weerasakera MM, Kottahachchi J, Fernando SN, Bogahaw LB

was awarded the prize for the

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7th December 2012