

A Comparison of the Cytotoxic Effects of Clostridium Difficile Toxins A and B on Peripheral Blood Monocytes and Intestinal Macrophages

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Background

Clostridium difficile associated colitis is mediated by its toxins A and B and results in recruitment of immune cells to the intestinal mucosa. Subsets of immune cells have previously been shown to be differentially susceptible to toxin A. However, there is little research on their interactions with toxin B.

Aims & Objectives

To compare the effects of toxins A and B on peripheral blood monocytes and intestinal macrophages.

Material & Methods

Varying concentrations of purified toxins were incubated with either human intestinal lamina propria cells or washed whole blood cells at 37°C for 1h. The reduction in cell size (indicative of subsequent cell death) was analysed by flow cytometry, using antibody markers for CD14 and HLA-DR to identify the cells of interest.

Results

Compared with that of toxin A, a significantly greater reduction in both monocyte and macrophage cell size was elicited by toxin B at 2.5, 5 and 10 µg/ml in a concentration-dependent manner. In addition, monocytes were significantly more susceptible than macrophages to the effects of toxin B, although the same was not shown to be true for toxin A. A subpopulation of macrophages expressing CD14 appeared to be more susceptible to toxin B than CD14- macrophages.

Conclusions

Our study demonstrates that toxin B exhibits greater cytotoxic effects on monocytes and macrophages compared to toxin A, which may have implications in the immune response to *Clostridium difficile* infection. A difference in susceptibility of the immune cell subsets to toxin B has also been suggested.

Prevalence of Cytomegalovirus Infection among Kidney Transplant Recipients in Bangladesh

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Background

Cytomegalovirus (CMV) is one of the most frequently encountered opportunistic viral pathogens in kidney transplantation.

Aims & Objectives

To identify prevalence of cytomegalovirus Infection among kidney transplant recipients in Bangladesh.

Material & Methods

This descriptive cross sectional study was conducted during the period from February 2012 to February 2013. Study population was kidney transplant recipients in Bangladesh. Sample size was 79. Data was collected in

the form of a semi structured questionnaire. Blood sampling was done via venopuncture. All sera were investigated for anti-CMV IgM, and the seropositive cases were investigated with Polymerase Chain Reaction (PCR) assay.

Results

Majority 32(40.5%) respondents belong to the age group of 60-65 years. 45(56.96%) respondents had history of blood transfusion. Majority 42 respondents (53.16%) were seropositive for anti-CMV IgM, 8 respondents (10.13%) were in borderline range, and rest 29 respondents (36.71%) were seronegative. By considering the respondents with borderline anti-CMV IgM levels as seropositive, 50 (63.29%) patients were seropositive for anti-CMV IgM. Among 50 seropositive cases, the

cytomegalo virus infection was confirmed in 35 (70%) of them by using PCR. Risk factors that were statistically significant in the development of CMV disease were recipient/donor relationship ($P = .008$), CMV donor+/recipient- ($P = .0095$), and recent rejection treatment ($P = .0015$).

Conclusions

The prevalence of cytomegalovirus Infection among

kidney transplant recipients in Bangladesh is high. Risk factors for developing cytomegalovirus disease are recipient/donor relationship, CMV donor+/recipient- and recent acute rejection treatment. ELISA is the method for screening for cytomegalovirus infection but it has low specificity. All the seropositive cases should be investigated by PCR to confirm the diagnosis.

The Opinion of 5th Year Medical Students of Bangladesh about the Status of Formative Assessment in Clinical Subjects

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Background

Formative assessment is defined as “Information communicated to the learner that is intended to modify his or her thinking or behavior for the purpose of improving learning”. It is part of a feedback process in which a learner is able to evaluate their response in light of the information received, and learn. Feedback is most effective if it focuses students’ attention on their progress in mastering educational tasks. Feedback to any pupil should be about the particular qualities of his or her work, with advice on what he or she can do to improve, and should avoid comparisons with other pupils.

Aims & Objectives

To find out the opinion of 5th year medical students of Bangladesh about the status of formative assessment in clinical subjects.

Material & Methods

This study was a cross sectional study, conducted in 8 Medical Colleges of Bangladesh during the period from May 2013 to October 2013. Study population was 5th Year medical students of Bangladesh. 5th Year medical students of Bangladesh who were co-operative and willing to take part voluntarily were included. Non-cooperative students and those medical students of who were not studying in 5th year were excluded from the study. Sample size was 981. Data was collected through face to face interview based on structured questionnaire.

It was entered and analyzed by computer by help of SPSS 17.0.

Results

Among different types of formative assessments, highest 86.96% were item examination. In written examinations, in 50% cases written script was not given to students and 45% of cases marks were displayed on notice board. Only in 1% of cases written script was given back with explanation of getting low score. In case of Oral examination, 65% of respondents agreed that reasons for failure were not well explained. Majority (35.2%) of the respondents thought that formative assessments helps them give more attention to study. 57.59% of the respondents were not satisfied about the present formative assessments. 65% of the respondents suggested that the minimum time interval between two item examinations should be more than 3 days. 86.65% of the respondents agreed that quality of formative assessment should be improved. 68% of the respondents agreed that certain percentage of marks should be adopted in final examination. 75% of the respondents suggested that teachers should put efforts in designing an assessment to make it better.

Conclusions

Our study revealed that in most of the cases adequate feedback is not given to the students and most of them are not satisfied with the present formative assessments. The authority should try to increase the quality of the present formative assessments