Should differential white cell counts be reported as percentages or absolute counts in patients with Severe Acute Respiratory Syndrome?

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Background: Severe acute respiratory syndrome (SARS) is associated with a lymphopenia, thrombocytopenia and neutrophilia and suspected cases may be admitted to hospital on the basis of such abnormalities. Laboratories may report changes as percentages or absolute counts. Objective: To investigate whether absolute or percentage differential counts were more predictive of patients with SARS pneumonia. Design: Prospective observational study. Setting: SARS clinic of an emergency department in Hong Kong. Subjects and methods: Whole blood and differential counts were performed on 506 patients presenting to a SARS screening clinic. Ninety-six patients subsequently developed SARS pneumonia. Results: Sixty-nine patients had abnormal lymphocyte absolute counts on first attendance at clinic of which 37 (54%) developed SARS pneumonia. This compared with 142 subjects with abnormal percentage lymphocyte values of which 50 (35%) developed SARS pneumonia. The area under the ROC curve for absolute lymphocyte counts is 0.851 (95%CI 0.816 to 0.881) and for percentage lymphocytes is 0.736 (95%CI 0.694 to 0.775). The area under the ROC curve for absolute monocyte counts is 0.535 (95%CI 0.489 to 0.580) and for percentage monocytes is 0.635 (95%CI 0.591 to 0.678). The area under the ROC curve for absolute neutrophil counts is 0.591 (95%CI 0.546 to 0.636) and for percentage neutrophils is 0.703 (95%CI 0.660 to 0.744). Conclusion: Reporting absolute rather than percentage values for differential leucocyte counts are more accurate predictors of SARS pneumonia. (Hong Kong j.emerg.med. 2004;11:12-15)

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