serum factors in children with protein caloric malnutrition

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Malnutrition represents a major health problem inmany developing countries and it usually affects infantsand children from 6-36 months.In many studies, the effect of malnutrition on theintegrity of the immune system has been investigated.The aim of this work was to study some immunologicalfactors in serum of PCMchildren which are affected bythe disease and their effects on the normal phagocyt icresponse.67 children of both sexes with an age range of3-36 months and suffering from different forms of PCMwere studied together with 21 normal healthy childrenas controls.Those children were selectedattending the out patient clinicsMedicine and investigated in the1988 and June 1990.from the patientsof Benha Faculty ofperiod between JuneThe c 1in icalhistory includingand immunizations.status was assessed through fullnutritional data, growth parametersAlso, ’t he se children were examinedclinically with stress upon weight, anthropometr icmeasures, concomitant infections and signs of PCM.PCMchildren were classified according to Wellcomeclassification, 1970 into Kwashiorkor, marasmic Kwashiorkorand marasmus groups.The number of cases were 21, 17and 29 cases respectively.The subjects of this study were tested for serumimmunoglobulins levels (IgG, IgM, IgA, IgE and IgD),complement component C3, circulating immune complexCIC, measles and tetanus antibodies and for opsonicactivity of serum. The achieved results of PCMchildrenwere compared to those of control group.In this study serum IgM, A and E were elevated inPCMchildren and this elevation could be attributed toconcomitent infection. Also serum IgD was elevated andwas not related to infection.Serum C3 levels were depressed in all PCMgroups.This depression was not canpletely related to the associat~d infections, still its levels were lower in thesever forms of infections associated with malnutrition.Also these decreased levels of C3 were affected by theseverity of malnutrition, as cases of Kwashiorkor havethe lowest levels followed by cases of marasmic Kwashiorkorthen marasmic children.CIC levels were e l evat.ed with PCMand correlated negatively with opsonization showing that it may bea factor affecting phagocytosis in these children. CICwas also correlated positively with measles antibodiesthat could be responsible for the elevated levels ofCIC, which in turn affect immunity. CIC was correlatednegatively to Cr CIC can trigger to activation ofcomplement system, so may aid in C3 depletion presentin PCM.In this study opsonic activity of serum was affectedby Kwashiorkor. Infection seems to be a factor ascases associated with infection showed lower opsonicactivity of their serum. Also cases associated withinfection have lower levels of serum

antibodies againsttetanus and measles. Measles antibodies were affectedmore by the severity of infection as cases with mixedrespiratory infection showed the lowest levels of theseant ibod ies.Serum antibodies against measles were depressed inall PCM groups. While those against tetanus was notaffected by malnutrition.from this study it was concl uded that:Humoral immunity is affected by PCM especiallyserum C3’ and antibodies against measles.Infection plays a role in morbidity of peM as itshareS in depression of serum antibody responseagainst tetanus and measles.vaccination of PCM children, especially duringinfections is better to be postponed untill recovery.Measles immunization in PCM children is better tobe delayed untill correction of malnutrition.CIC plays a role in disease production in PCMchildren and this role needs further studies to beclarified.