CELLULAR IMMUNE RESPONSE TO MEASLES, VARICELLA-ZOSTER AND TETANUS VACCINATION IN PRETERM INFANTS

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Background and aims: Few studies have assessed cell-mediated immunity in preterm infants. This study aimed to compare cellular immune responses to vaccination against measles, varicella-zoster and tetanus in preterm and term infants.

Methods: Two prospective cohorts of infants (Group 1: 61 infants; BW: 1184±214g; GA: 30±2.2wks); Group 2, 53 infants, BW: 3245±285g; GA: 39±1wk) aged 12-18 months were vaccinated with measles vaccine at 12mo and tetanus booster and varicella-zoster at 15mo. Response to measles, varicella-zoster and tetanus was evaluated by IFN-gamma production by CD4 and CD8 T cells by flow cytometry. Cell percentages were compared by t-test after logarithmic transformation; $p < 0.05$ was considered significant.

Results: Preterm and full-term infants had similar IFN-gamma production by CD4 and CD8 T cells after measles, varicella-zoster and tetanus vaccination.

IFN-gamma producing cells (%)	Preterm	Term	p
Measles IFN-gamma CD4	0.722±1.321	2.203±8.894	0.205
Measles IFN-gamma CD8	1.683±2.281	4.337±8.762	0.062
Varicella IFN-gamma CD4	1.147±2.562	1.139±2.730	0.870
Varicella IFN-gamma CD8	1.978±4.491	2.082±4.106	0.832
Tetanus IFN-gamma CD4	1.554±6.016	0.736±3.328	0.620
Tetanus IFN-gamma CD8	1.974±4.779	1.167±3.544	0.520

[IFN-gamma production after vaccination]

Reactivity to phyto-hemagglutinin by CD4 and CD8 T cells increased significantly from 12-15mo and 12-18mo of age in Group 1, but not in Group 2.

Conclusions: Except by phyto-hemagglutinin activation, term and preterm infants had similar cellular immune response after vaccination.

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