Measles virus and lymphopenia: Does reality meet theory? A case series from Lakonia -Greece.

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Background

Measles is one of the most contagious infectious diseases, that although it consists a primarily childhood illness, can affect people of all ages. Measles is caused by the measles virus, an RNA virus within the family *Paramyxoviridae* .It typically enters with high fever, coryza, conjunctivitis and cough and is followed by the appearance of Koplik spots and characteristic maculopapular rash, that lasts up to 5-7 days. Measles virus induces transient immunosuppression that occasionally leads to fatal secondary infections. It has been found that at the onset of rash, remarkable lymphopenia has already occurred with reduction of CD4+ T,CD8+ T,B cells, neutrophils and monocytes. The severity and duration of the lymphopenia are found to be age-dependent; less severe in young children and more severe in infants under one year of age, adolescents and adults.

Case Presentation Summary

A measles outbreak has occurred in Europe that is still ongoing .During the period 2016-2017,more than 20.000 cases have been recorded in Europe. In Greece, till 31st of December 2017,968 cases have been recorded, especially in the southern part of the country. In our hospital,21 cases of measles presented from October 2017 till January 2018,aged from 8 months up to 44 years old. In 14 of them we performed laboratory examinations. All of them had lymphopenia immediately after rash eruption, but adolescents and adults(11-44years old) did have more severe lymphopenia, with lymphocyte absolute number from 200 up to 900 than young children(12m-5 years),who presented with lymphocyte absolute number from 600 up to 4.050.

Learning Points/Discussion

From our clinical cases, measles virus causes immunosuppression and lymphopenia, that is indeed more severe in adolescents and adults. No complications were reported in our series.

	Age	n-WBC(K/ μ L)	n-Lymphocytes (K/ μ L) - (%)
Patient 1	8 months	6.900	2.600 (37.7%)
Patient 2	12 months	10.400	3000 (29%)
Pati ent 3	14 months	13.500	6.100 (45%)
Pati ent 4	14 months	4.800	1.700 (35%)
Pati ent 5	22 months	5.300	1.300 (23.9%)
Patient 6	5 years	5.500	600 (10.1%)
Patient 7	11 years	3.700	800 (21.7%)
Patient 8	12.5 years	3.900	500 (13%)
Patient 9	12.5 years	4.100	500 (12.2%)
Patient 10	14 years	3.200	900 (29.4%)
Patient 11	18 years	4.300	400 (8.8%)
Patient 12	19 years	2.100	200 (11.3%)
Patient 13	41 years	6.100	600 (10%)
Patient 14	44 years	5.100	400 (8%)

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