

**PO-0184** SEASONALITY OF ACUTE BRONCHIOLITIS IN HOSPITALIZED INFANTS OVER A 4-YEAR PERIOD

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**Background and aims** Bronchiolitis is the most common lower respiratory infection in infants and a leading cause of hospitalizations in this age group. To describe the rhythm and seasonality of the yearly epidemics of bronchiolitis in hospitalised children.

**Methods** Epidemiological analysis of patients who were admitted to our hospital with bronchiolitis, over an 4-year period, from 2008 to 2012. The epidemic onset and conclusion was established according to the first and last cases per months, respectively.

**Results** Data was collected from 389 patients, mean age: 59 days (5–739), 59% male. The mean length of stay was 5,9 days (2–71). There was no risk factor in 87% (10% premature and 1,5% heart disease). The clinical score at hospitalisation was mild (4%), moderate (43%) and severe (2,8%). The RSV was positive 67%. Epidemics begin in October (50%) and November (25%); the highest peak was observed in January, February and December and its conclusion varies between March and July. There were no cases in August and September.

**Conclusion** Bronchiolitis epidemics onset is in October and November and conclusion varies along time years in hospitalised infants. The most incidence months are January and February with no cases in August and September. It not seems that a late season is followed by an early season in a 2-year pattern as is described but they alternate between greater numbers of patients with other patients less.

**Abstract PO-0184 Table 1** Incidence of bronchiolitis in each epidemic

	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL
2008–09		2	33	28	6					69
2009–10			7	41	48	15			1	112
2010–11	1	1	14	36	35	5	2	1		95
2011–12	2	3	31	55	12	5	4		1	113
	3	6	85	160	101	25	6	1	1	389

**PO-0185** ACUTE RESPIRATORY TRACT INFECTIONS (ARTI) IN HOSPITALISED CHILDREN: VIRUSES, INTERFERON-ALPHA AND GAMMA, S-IGA LEVELS

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**Background** Detection of respiratory viruses, IFN-alpha, gamma, s-IgA levels in the first 3 years old hospitalised children within 3 days of symptom onset.

**Methods** The human viruses were detected in nasal wash specimens obtained from 86 children by polymerase chain reaction (PCR), IFN-alpha, gamma, s-IgA plasma and nasal wash specimens levels, IFN-alpha, gamma induced production *in vitro* were investigated. The IFN-alpha production was induced by

Newcastle disease virus, IFN-gamma production was induced by phytohemagglutinin.

**Results** Influenza virus B was detected in 35% investigations, A (H1N1) - 23%, A(H3N2) - 4%, Parainfluenza virus (PIV) - 5%, rhinoviruses (HRV) - 4%, metapneumovirus (HMPV) - 6%, bocavirus (HBoV) - 5%, Adenovirus (AdV) and Respiratory syncytial virus (RSV) - 9%. Seasonal features were found: A(H1N1) dominated in March (66.7%), B - in June (77,8%), PIV was recorded in March only. HRV and RSV were noted as the longest circulation (from January to May), AdV, HBoV, HMPV were detected from March to June. The s-IgA decrease less than 1.5 mg/ml was found in 75.8% children in nasal wash specimens. Serum IFN-alpha, gamma were decreasing below a sensitivity threshold (less 2 pg/ml) in 67.7% and 69.4%, especially in influenza children and in ARTI complications. The nasal wash specimens INF-alpha, gamma levels less than 2 pg/ml were found in 38.7% and 48.4%. The IFN-alpha, gamma induced levels *in vitro* were lowered in 22.6% and 40.3%.

**Conclusions** Our data demonstrate the IFN-alpha, gamma deficit in children with ARTI. It contributes IFN-alpha, gamma replaceable therapy in infants especially. This is very necessary the ARTI seasonal prevention.

**PO-0186** INFLUENCE OF IL-10 GENE POLYMORPHISMS ON IMMUNE RESPONSES AFTER ACELLULAR PERTUSSIS BOOSTER VACCINATION IN ADOLESCENTS

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**Background and aim** Despite the mass vaccinations, pertussis has recently caused large epidemics in many industrialised countries. Vaccine-induced immune responses may be impaired due to polymorphisms in genes encoding regulatory cytokines such as IL-10. The aim of this study was to evaluate the role of IL-10 promoter polymorphisms on vaccine responses after acellular pertussis booster vaccinations.

**Methods** Seventy-five adolescents received diphtheria-tetanus-acellular pertussis (dTap) vaccination in 1997. They were followed at 3, 5 and 10 years after. At year 10, a second booster was administered. Antibodies (n = 52) and cell mediated immunity (CMI) (n = 38) against pertussis antigens were measured. IL-10 polymorphisms (rs1800890 and rs1800896) were detected using Sequenom iPLEX Gold system.

**Results** After the second booster, rs1800896 was found to affect the geometric mean value (GMV) of proliferation (counts per minute, cpm) and stimulation index (SI) against pertussis antigens; pertussis toxin (PT), filamentous hemagglutinin (FHA), pertactin (PRN) (Table).

Another SNP (rs1800890) affected the CMI against PT and FHA after the booster vaccination. Also, the IgG antibody

**Abstract PO-0186 Table 1**

	Proliferation/cpm			SI		
	PT	FHA	PRN	PT	FHA	PRN
T/T (n = 10)	721,2	3651,6	1185,5	10,3	52	16,6
T/C (n = 21)	3208,9	4902,4	1907,8	63,7	97,3	37,8
C/C (n = 4)	112,8	665,4	196,7	1,8	10,7	3,2
p-value	0,008	0,021	0,075	0,001	0,037	0,031