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behavior in the last decade among MSM in Amsterdam may have balanced the positive effects of the targeted vaccination program.

**O13 Neurological disease associated with seasonal B19 virus infection in the United Kingdom**

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**Background**: Erythrovirus B19 (formerly parvovirus B19), is the cause of the common childhood illness erythema infectiosum (EI). B19V is rarely considered as a cause of neurological illness although there have been isolated case reports describing neurological symptoms in patients during or following EI. A recent retrospective study suggests that the virus is present in the CSF of almost 5% of undiagnosed paediatric encephalitis/meningitis cases in the United Kingdom. We tested cerebrospinal fluid (CSF) samples from paediatric and adult patients, collected during periods of high and low B19V incidence.

**Patients Details and Methods**: A total of 227 CSF samples sent to Manchester Royal Infirmary Clinical Virology Laboratory for testing for suspected viral meningoencephalitis were tested. Of these 138 were collected in the high incidence and 89 in the low incidence period. All CSF samples were tested using B19V-specific nested DNA PCR and all positive CSF samples were tested for the presence of anti-B19V antibodies using immunoblot test.

**Results**: Ten of 227 CSF samples were positive for B19V DNA (4.4%). In the high B19V incidence cohort, 9/138 samples (6.5%) were positive. In the low incidence cohort 1/89 cases (1.1%) were positive. Anti-B19V antibody (IgG) was detected in four out of ten B19V positive CSF samples suggesting that a functioning immune response against the virus was occurring.

**Conclusions**: B19V is associated with neurological illness in both children and adults. The finding of a higher incidence of B19V DNA positive CSF during community outbreaks suggests the virus may be an unrecognised cause of meningoencephalitis.

**O14 HHV-6 DNA in CSF and diagnosis of encephalitis**

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**Background and Aims**: The prevalence and concentration of HHV-6 DNA in the cerebrospinal fluid (CSF) of the immunocompetent in primary infection was compared with that in viral chromosomal integration.

**Methods**: Samples from 510 immunocompetent individuals with suspected encephalitis were tested. HHV-6 DNA concentration (log_{10} copies/ml) was measured in CSF, serum and blood using PCR. Primary infection was defined by antibody seroconversion and/or low concentration HHV-6 DNA in a seronegative serum. Chromosomal integration was defined by high concentration viral DNA in serum or blood.

**Results**: The prevalences of CSF HHV-6 DNA in primary infection and chromosomal integration were 2.5% and 2.0% respectively in young children (<2 years) and 0% and 1.3% respectively in the older children/adults. The mean concentration of CSF HHV-6 DNA in children with primary infection was significantly lower than that in patients with viral chromosomal integration. Only HHV-6B DNA was found in primary infection whereas in viral integration both HHV-6A and B were detected.

**Conclusions and Discussion**: Apart from primary infection, chromosomal integration is the most likely cause of HHV-6 DNA in the CSF of the immunocompetent. In such cases, viral chromosomal integration should be excluded before diagnosing encephalitis.
late responders (13/17, 76.5%) were affected by HCMV infections requiring antiviral treatment (p ≤ 0.0001).

**Conclusion:** Simultaneous monitoring of HCMV infection and HCMV-specific T-cell immunity predicts T-cell mediated control of HCMV infection.

**O17 Monitoring of cytomegalovirus and adenovirus infections after different conditioning regimens**

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**Aims:** Quantitative monitoring of cytomegalovirus (CMV) and adenovirus (AdV) infections in patients after allogeneic stem cell transplantation (SCT) was used to compare reduced-intensity conditioning (RIC) and myeloablative conditioning (MAC) regimens.

**Methods:** In 107 adult SCT patients receiving RIC (48) or MAC (59), CMV-DNA load was monitored weekly in plasma. The area-under-the-viraemia-curve, number and duration of CMV-treatment episodes were used to score severity of CMV-infections. AdV-DNA levels were screened at 1, 3 and 6 months, followed by further analysis of the course in positive cases. A reference group of 58 paediatric allogeneic SCT recipients was used to compare the incidence of AdV infections.

**Results:** CMV viraemia occurred in 21 (60%) and in 19 (44%) of 35 RIC and 43 MAC patients at risk for CMV infections. The mean CMV-free survival time following RIC and MAC was 70 days (95% CI: 59–80 days) and 77 (68–86 days), respectively (p = 0.24). Area-under-the-viraemia curves were similar in both conditioning groups. AdV-DNA viraemia was detected in 5 adults (4.7%) and 8 paediatric patients (13.8%). One adult receiving MAC died with disseminated AdV-disease and in 4 (3 RIC and 1 MAC) AdV-viremia was transiently present. In the paediatric reference group 7 out of 8 patients with AdV-viremia were treated with ribavirin or cidofovir and 4 had a fatal outcome.

**Conclusions:** Quantitative viral monitoring, including the novel approach of area-under-the-viraemia curves, appeared a useful tool in the comparison of the safety of conditioning regimens. Disseminated AdV infections were more frequent and more severe in children compared to adults.

**O18 Outcome of HHV6 reactivation after haematopoietic cell transplantation in children**

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Human herpes virus 6 (HHV6) reactivates during haematopoietic cell transplantation (HCT) and is associated with severe clinical manifestations in adults. The role in children remains controversial. We investigated the relation between HHV6 reactivation and HCT-associated morbidity and mortality in 60 children.

Sixty allogenic HCTs were performed in 53 patients, median age 6.6 y (0.1–18.1). Plasma viral-load was monitored weekly for HHV6, Epstein Barr Virus (EBV), cytomegalovirus (CMV) and adenovirus (AdV). Clinical observations were recorded.

HHV6-reactivations were grouped in group I (no HHV6), group II (viral load <1000 cp/mL) and group III (viral load >1000 cp/mL). Median follow-up was 13 (1–26) months. HHV6-reactivation occurred in 36/60 (60%) with 30/35 (86%) occurring within the first 30 days post-HCT. In 19/60 (32%), HHV6 load was above 1000 cp/mL. Groups did not differ regarding sex, age, donor source or HLA-disparity.

HHV6-reactivation was associated with grade 2–4 acute GvHD (p = 0.07), chronic GvHD (p = 0.065) and higher overall mortality in group III. HHV6 was reactivated in 1/13 (85%) of acute GvHD cases at presentation and in 8/9 (89%) of chronic GvHD cases. In 26/29 (90%) of multiple viral reactivations, HHV6 reactivated and in 19/29 (68%) HHV6 reactivated first. Of the deceased, 9/12 (75%) had multiple viral reactivations, including HHV6.

In children, HHV6-reactivation is common post-HCT in children and is associated with acute GvHD, multiple viral reactivations and with higher mortality rate. Although the role of HHV6-reactivation in HCT-associated morbidity and mortality has to be elucidated, its early reactivation may be a marker for clinical progression and warranted therapeutic intervention.

**O19 Virological diagnosis of HPV infections**

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Human Papillomaviruses (HPV) are the most common agents of viral sexually transmitted infection and are associated with benign, self-limiting, proliferative lesions (warts, condylomata), carcinomas in situ (CIN) and invasive cancers. Previous studies suggested that a high viral load, measured early in infection, may be a prognostic marker for the development of cervical cancer. Currently, HPV testing is not included in the National Cervical Screening Program. Major studies are underway to determine the role of HPV testing as an adjunct to cytological examination. HPV DNA can be detected in genital samples collected for Liquid based cytology (LBC) by in-house PCR with established primer pairs, or by commercial assays.

Data shows that the “hidden” burden of HPV infection within the UK, was previously often underestimated because less sensitive methods were used for HPV detection. However, in comparison in-house PCR assays may be too sensitive for HPV testing as an adjunct to the cytological screening programme, but they are important to our understanding of its epidemiology, to know the true background of HPV infection. Commercial assays have a defined viral load cut-off and are therefore of more clinical value.

HPV detection and typing may have a limited but important role in cervical screening. Algorithms, utilising and combining the best attributes of cervical cytology and HPV detection, recommending the periodicity of screening in defined cases and including guidelines for patient management are needed.

**O20 Papillomavirus (HPV) DNA load evaluation in urine and cervical samples**

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**Background and Aim:** Last recommendations from the US ACOG (august 2003) and French ANAES (november 2003) reported the use of the HPV test in patients presenting abnormal smears (ASCUS). As for Chlamydia trachomatis detection, a HPV test in urine using a high sensitive PCR assay should facilitate its diagnosis.

**Methods:** 204 urine and cervical paired samples were collected from 102 patients (age:32–8) between April 2004 and May 2006 at Angers and Brest University Hospitals and were assessed using a SybrGreen real-time PCR protocol in the HPV L1 gene, using the Mx4000 (Stratagene) and Lightcycler (Roche) systems. Calibration was obtained using a HPV type 16 plasmid construct. Results were expressed in log HPV DNA copies/ml of sample (cut-off at 15 copies). Positive samples were genotyped using the LIPA HPV test (Innogenetics).

**Results:** 49 out of 102 paired samples were HPV positive (48%). Sensitivity to detect HPV in urine was 82%, specificity 94%, concordance 91%. High viral load were observed in cervical and urine samples (respectively mean at 5.41 and 4.31 log/mL, with a range from 2.41 to 10.40) The same high risk HPV types were found in all paired-positive samples (40% type 16, 23% type 66, 17% type 33, 11% type 56, 9% type 31 and 37% having more than one type).

**Conclusion:** Our high sensitive and quantitative consensus HPV DNA real-time PCR assay allows HPV screening in urine. A prospective multicentric (PAPU) study with the French “Ligue contre le Cancer” is ongoing to validate this approach.