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Kaposi's Sarcoma in Lung Transplantation: a decade's single centre case series

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Purpose

Human herpes virus 8 (HHV8, a.k.a. KSHV, Kaposi's sarcoma associated herpesvirus) is a large double stranded DNA virus, which can cause Kaposi's sarcoma, multicentric Castleman's disease and primary effusion lymphoma. Being an opportunistic virus, immunocompromised patients, including solid organ transplant recipients, are disproportionately affected. The aim of our study was to review all the cases of HHV8 related disease in our lung transplant population.

Methods

We retrospectively evaluated the incidence of KS and HHV8 associated lymphoproliferative disorders among all lung transplant recipients at our centre, from January 2008 to December 2017. Clinical data of these patients were collected, taking into account time of onset, donor/recipient HHV8 serology, treatments and outcomes.

Results

Four out of 203 (2%) patients developed HHV8 related disease. Table 1 summarizes our findings.

Table 1 – Main findings

Patient	Sex, age (yrs)	Indication for LuTx	Diagnosis (time from LuTx, months)	HHV8 D/R serostatus	Recipient seroconversion	Disease	Therapy	Outcome
1 - GR	M 65	HP	10	IgG-/IgG +	NA	Cutaneous KS	FK → Siro	Alive at 70 months from LuTx
2 - AP	M 39	NSIP	13	IgG-/IgG +	NA	Cutaneous KS	FK → Eve	Alive at 116 months from LuTx
3 - SG	M 46	CF	14	IgG+/IgG -	No	Visceral KS	FK → Eve Etoposide, Lipo-doxo (4 cy), Rituximab	Dead at 18 months from LuTx
4 - LA	M 22	CF	10	IgG+/IgG -	Yes	Visceral KS	FK → Eve Etoposide, Lipo-doxo (3 cy)	Alive at 18 months from LuTx

Abbreviations: HP, hypersensitivity pneumonitis; NSIP, non specific interstitial pneumonia; CF, cystic fibrosis; D, donor; R, recipient; FK, tacrolimus; Siro, sirolimus; Eve, everolimus; LuTx, lung transplantation; Lipo-doxo, liposomal doxorubicin; cy, cycles; NA, not applicable

Disseminated forms of KS occurred through primary HHV8 infection form a seropositive donor; these patients initially complained of non specific symptoms, including fever and malaise, and presented with pancytopenia and very high HHV8 DNAemia. We observed a rapidly aggressive progression, and patient 3 died 4 weeks after the fourth dose of liposomal doxorubicin due to an untreatable micotic infection. In contrast, KS due to viral reactivation (i.e. D-/R+) was milder, limited to the skin, and responded to modification in the immunosuppressive regimen. Interestingly, we received notice that the recipient of the liver harvested from patient 4's donor developed another serious HHV8 related disease (presumably Castelman's disease, investigation currently on going at the other transplant centre).

Figure 1 – Patient 3, PET scan (at time of diagnosis)

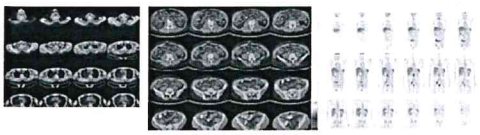
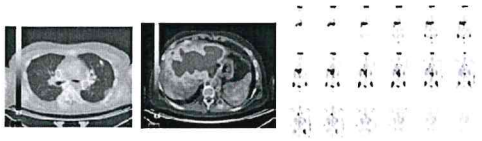


Figure 2 – Patient 4, PET scan (at time of diagnosis)



Conclusions

We suggest implementation of D/R serological screening for HHV-8 before transplantation, in order to identify those at risk of developing HHV-8 related diseases, improve patients' clinical and virological surveillance and possibly individualize immune-suppressive therapy. For the time being, in the absence of a systematic screening, we strongly recommend to report index cases as soon as possible to regional allocation systems in order to identify other recipients potentially at risk.

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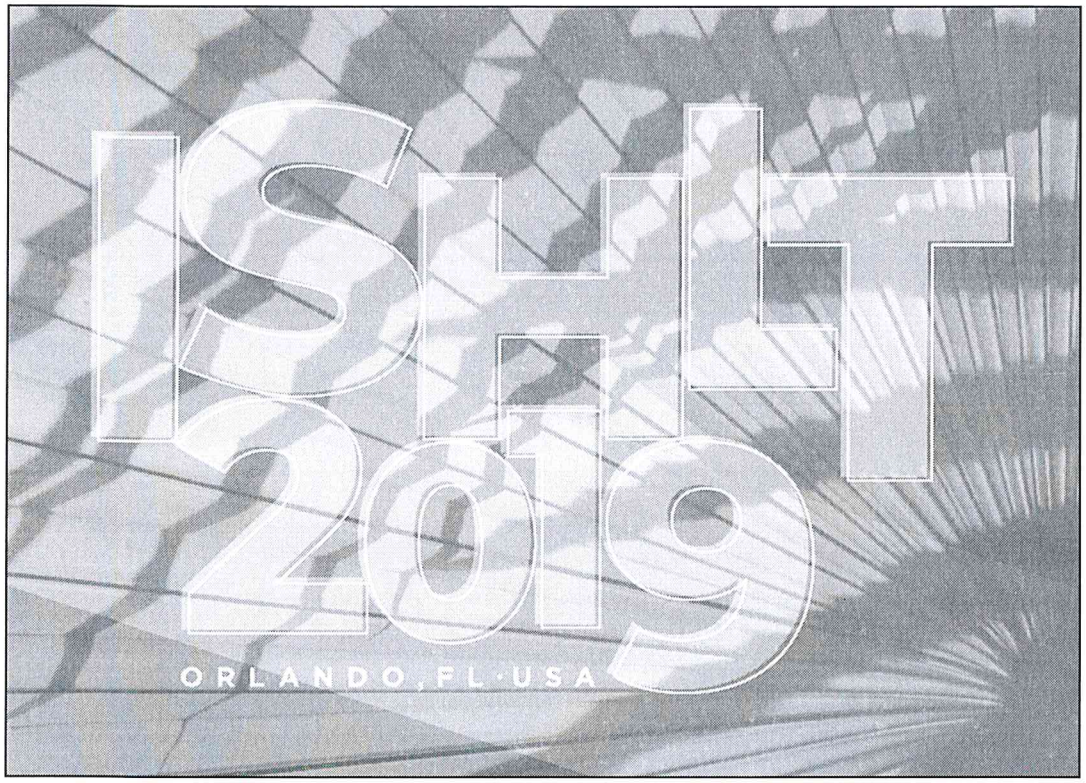

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