

Table 2.1 Case-control studies of KSHV and Kaposi Sarcoma

Reference, study location and period	Characteristics of cases and/or tissue type examined	Characteristics of controls and/or tissue type examined	Detection method	No. of exposed cases	No. of exposed controls	Relative risk (95% CI)	Adjusted potential confounders	Comments
Chang et al. (1994) USA	AIDS-KS	AIDS – various Non-AIDS – various	PCR	25/27	6/39 0/103	68.8 (11.0-571.6)	-	Fresh frozen tissue
Su et al. (1995)	AIDS-KS Non-AIDS KS	AIDS – various Benign hyperplasia and lymphomas	PCR	4/4 2/3 Total 6/7	0/5 0/32 0/37	-	-	
Dupin et al. (1995)	AIDS-KS Non-AIDS KS	Non-AIDS – various	PCR	4/4 5/5 Total 9/9	0/6	-	-	Snap-frozen tissue
Boshoff et al., (1995), UK	AIDS-KS Transplant-KS Non-AIDS-KS	Non-AIDS – various	PCR	14/14 8/8 16/17 Total 38/39	0/11	-	-	Fresh frozen or paraffin embedded
Moore & Chang (1995), USA	AIDS-KS Classic KS Non-HIV MSM	Skin and PBMC, healthy people	PCR	10/11 6/6 4/4 Total 20/21	1/21	400 (18.2-55772)	-	Fresh Frozen
Schalling et al. (1995)	AIDS-KS African KS Classic KS	PBMC, AIDS-B cell lymphoma AIDS-lymph node Non-AIDS lymphoma Non-AIDS skin	PCR	25/25 18/18 3/3 Total 46/46	0/13 0/8 0/12 0/3 Total 0/36	-	-	-
Collandre et al. (1995)	PBMC AIDS-KS	PBMC HIV-pos	PCR	2/10	0/9	-	-	PCR Southern blot
Ambroziak et al. (1995)	PBMC AIDS-KS PBMC HIV-neg	PBMC HIV-pos PBMC HIV-neg	PCR	7/7 3/3 Total 10/10	0/6 0/14 Total 0/20	-	-	-

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Whitby et al. (1995)	PBMC AIDS-KS	PBMC HIV-pos PBMC Oncology PBMC Blood donor	PCR	24/46	11/143 0/26 0/134 Total 11/303	29.0 (11.7-73.1)	-	Nested PCR
Howard et al. (1995)	PBMC AIDS-KS	PBMC AIDS	PCR	11/17	0/6	-	-	Nested PCR
Monini et al. (1996a, b), Italy	Semen AIDS-KS	Semen AIDS Semen donors	PCR	1/5	0/10 3/13 3/23	1.7 (0.0-30.1)	-	Nested PCR
Chang et al. (1996), USA	AIDS-KS African KS	HIV positive HIV negative	PCR	22/24 17/20 Total 39/44	1/7 2/15 Total 3/22	49.4 (9.0-328.0)	-	Paraffin embedded, negatives retested by PCR
O'Neill et al. (1996)	AIDS-KS lesions/tissues	normal tissue from same patients and a normal HIV seronegative control	PCR	7/7	0	-	-	Nested PCR, fresh frozen or paraffin embedded
Buonaguro et al. (1996), Italy	AIDS KS African KS Classic KS Transplant KS	Reduction mammoplasty Penile carcinoma Xeroderma pigmentosum PBMC HIV-pos	PCR	12/12 28/28 2/2 19/19 Total 61/61	0/3 0/4 0/10 0/15 Total 0/14	-	-	Snap-frozen
Cathomas et al. (1996)	AIDS-KS Classic KS Transplant KS	HIV other skin HIV-neg. other skin	PCR	9/9 12/12 1/1 Total 22/22	0/4 0/10 Total 0/14	-	-	Paraffin embedded, nested PCR

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Gaidano et al. (1996)	AIDS-KS	Lymphoma (not PEL) Anogenital cancer	PCR	35/35	0/46 0/14 Total 0/60	-	-	Fresh frozen and paraffin embedded
Jin et al. (1996)	AIDS-KS Classic KS	Various benign conditions	PCR	5/5 12/12 Total 17/17	0/138	-	-	Paraffin embedded
Dictor et al. (1996)	AIDS-KS Classic KS	Endothelial lesions	PCR	14/14 35/40 Total 49/54	0/86	-	-	Paraffin embedded
Marchioli et al. (1996)	AIDS-KS Classic KS African KS HIV-neg MSM	Normal PBMC Normal skin Lymphomas Carcinomas	PCR	28/28 7/8 7/10 2/2 Total 44/48	0/163 0/10 0/45 0/12 Total 0/230	-	-	Fresh frozen and paraffin embedded
Luppi et al. (1996)	AIDS-KS Classic KS	Normal PBMC Normal salivary gland Normal saliva Tonsils	PCR	3/4 15/22 Total 18/26	0/13 0/9 0/6 2/11 Total 2/39	41.6 (7.0-327.1)	-	Paraffin embedded
McDonagh et al. (1996)	KS - NOS	Angiosarcoma Haemangioma	PCR	9/9	7/24 1/26 Total 8/50	-	-	Fresh frozen and paraffin embedded
Corbellino et al. (1996a, b, c)	AIDS-KS	HIV-pos, various HIV-neg, various	PCR	7/7	0/10 0/3 Total 0/13	-	-	Snap frozen

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Marchioli et al. (1996)	PBMC AIDS-KS PBMC HIV-neg MSM	HIV-pos, various HIV-neg, various	PCR	46/99 0/2 Total 46/101	0/64 0/163 Total 0/227	-	-	PCR, Southern Blot
Moore et al. (1996) (corrected, Parry & Moore, 1997)	PBMC AIDS-KS	PBMC HIV-pos MSM PBMC HIV-pos, haemophiliac	PCR	11/21	3/23 0/19 Total 3/42	7.3 (1.4-47.9) 21.8 (2.4-978.0)	-	Nested PCR
Humphrey et al. (1996)	PBMC AIDS-KS	PBMC HIV-pos, various PBMC HIV-neg, various	PCR	34/98	12/64 0/11 Total 12/75	2.3 (1.0-5.3)	-	PCR Southern blot
Decker et al. (1996)	PBMC AIDS-KS	PBMC Transplant pts PBMC Healthy donors	PCR	8/9	4/5 3/5 Total 7/10	1.1 (0.0-53.4)	-	Multiple samples tested in controls
Gao et al. (1996), USA	Sera AIDS-KS	Sera AIDS	Serology - LANA	32/40	7/40	18.9 (5.4-69.8)	Matched for CD4 count at time of diagnosis	Data from this study are included in the cohort table

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Gao et al. (1996)	<i>Sera:</i> AIDS-KS (US)	<i>Sera:</i> AIDS, MSM (US)	<i>Serology:</i> BC-1	32/40	7/40	-	-	OR not estimated because the range of different population groups involved were not comparable
	AIDS-KS (Italy)	HIV,	LANA,	11/14	0/20			
Classic KS (Italy)	haemophilic (US)	Western	Blot	11/11	25/35			
AIDS-KS (Uganda)	HIV-pos Uganda cancer patients	HIV-neg Uganda cancer patients		16/18	29/47			
Endemic KS (Uganda)	Blood donor (US)	Blood donor (Italy)		1/1	0/122			
	Blood donor (Italy)	EBV-pos (US)		Total 71/84	4/107			
					0/69			
AIDS-KS (US)	AIDS, MSM (US)	BCP-1	35/40	12/40				
AIDS-KS (Italy)	HIV,	LANA,	10/14	0/20				
Classic KS (Italy)	haemophilic (US)	IFA	11/11	18/35				
AIDS-KS (Uganda)	HIV-pos Uganda cancer patients		14/18	24/47				
Endemic KS (Uganda)	HIV-neg Uganda cancer patients		1/1	0/122				
	Blood donor (US)	Blood donor (Italy)	Total 71/84	4/107				
	Blood donor (Italy)	EBV-pos (US)		0/69				

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Kedes et al. (1996)	<i>Sera:</i> AIDS-KS Classic KS	<i>Sera:</i> HIV-pos (haemophiliac) HIV-pos (transfusion recipient) <i>STD clinic attendee:</i> HIV-pos (MSM) HIV-pos (hetero) HIV-neg <i>Blood donor:</i> HIV-pos HIV-neg	<i>Serology:</i> BCBL-1 LANA IFA	37/45 1/1	9/300 2/44 13/37 0/9 10/130 41/138 2/141	-	-	OR not estimated because the range of different population groups involved were not comparable
Albini et al. (1996)	PBMC AIDS-KS PBMC Classic KS PBMC Transplant KS	Healthy donors	PCR	3/54 1/6 1/2 Total 12/28	0/4	-	-	-
Heredia et al. (1996)	PBMC AIDS-KS PBMC HIV-neg KS	HIV-pos, various HIV-neg, various	PCR	2/2 6/8 Total 8/10	0/2 0/8	-	-	-
Lefrère et al. (1996)	PBMC AIDS-KS	PBMC HIV-pos, various PBMC HIV-neg, various	PCR	10/11	1/14 1/45 Total 2/59	285.0 (18.8-11006)	-	-
Gupta et al. (1996), USA	Semen AIDS-KS	Semen AIDS	PCR	2/14	0/10	-	-	Nested PCR

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Albini et al. (1996)	AIDS-KS African KS Classic KS Transplant KS	HIV-pos, skin HIV lymphoma HIV-pos, other HIV-neg, lymphoma	PCR	59/59 21/21 32/33 6/7 Total 118/120	0/4 2/10 0/2 1/34 Total 3/50	- 924.3 (124.8-10194)	-	Fresh or paraffin embedded
Uthman et al. (1996)	AIDS-KS Classic KS	HIV-pos, skin HIV-neg, various	PCR	23/23 5/5 Total 28/28	0/28 0/53 Total 0/81	-	-	Nested PCR

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Lennette et al. (1996)	<i>Sera:</i> KS (AIDS plus some classic) Endemic KS	<i>Sera:</i> HIV-pos MSM (US)	<i>Serology:</i> BCBL-1 LANA IFA	47/91	19/94	-	-	OR not estimated because the range of different population groups involved were not comparable
		HIV-pos IVDU (US)		28/28	0/13			
		HIV-pos women (US)			0/33			
		Children (US)			0/263			
		Adults (US)			0/174			
		Blood donor (US)			0/44			
		Women (US)			0/54			
		Haemophiliac (US)			0/83			
		Various cancer patients from Americas, Asia, Europe			0/147			
		EBV-pos (US)			0/40			
		Rheumatoid (US)			0/20			
		Zimbabwe			4/37			
		Nigeria			3/52			
		Zaire			4/16			
		Uganda			9/82			
		Gambia			11/45			
Ivory Coast		4/7						
Haiti		0/52						
Dominican Republic		0/40						
Guatemala		0/20						

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Lennette et al. (1996) (contd)	KS (AIDS plus some classic) Endemic KS	HIV-pos MSM (US)	BCBL-1 TPA	87/91	87/94			
		HIV-pos IVDU (US)	induced lytic IFA	28/28	3/13			
		HIV-pos women (US)				7/33		
		Children (US)				10/263		
		Adults (US)				33/174		
		Blood donor (US)				9/44		
		Women (US)				15/54		
		Haemophiliac (US)				10/83		
		Various cancer patients from Americas, Asia, Europe				19/147		
		EBV-pos (US)				8/40		
		Rheumatoid (US)				5/20		
		Zimbabwe				12/37		
		Nigeria				29/52		
		Zaire				13/16		
		Uganda				63/82		
		Gambia				38/45		
Ivory Coast				7/7				
Haiti				15/52				
Dominican Republic				5/40				
Guatemala				2/20				

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Decker et al. (1996)	AIDS-KS	HIV-neg healthy, PBMC Transplant PBMC	PCR	5/5	3/5 4/5 Total 7/10	-	-	Fresh tissue
Li et al. (1996)	AIDS-KS Classic KS	HIV-neg, skin	PCR	6/6 3/3 Total 9/9	0/5	-	-	Fresh tissue
Miller et al. (1996), USA	<i>Sera:</i> AIDS-KS	<i>Sera:</i> HIV-pos MSM	<i>Serology:</i> BC-1 western blot BC-1 IFA	32/48 31/48	7/54 7/54	13.4 (4.5-41.6) 12.2 (4.2-37.6)	-	
Noel et al. (1996)	AIDS-KS HIV-neg KS	HIV-neg, skin and others	PCR	41/61 8/17 Total 49/78	1/26	42.2 (5.6-881.3)	-	Paraffin embedded

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Simpson et al. (1996)	<i>Sera:</i> AIDS-KS (USA, UK) AIDS-KS (Uganda) Classic KS (Greece)	<i>Sera:</i> HIV-pos MSM HIV-pos women with STD HIV-pos haemophiliac HIV-neg haemophiliac HIV-pos IVDU HIV-neg IVDU HIV-neg MSM with STD Heterosexual men Heterosexual women Children with fever Blood donor-UK Blood donor-USA Greeks HIV-pos Ugandan HIV-neg Ugandan	BCP-1 LANA IFA	46/57 14/17 17/18	10/33 3/15 0/26 ND 0/38 0/25 8/65 4/75 2/26 0/24 4/150 0/117 3/26 18/34 9/17	- -	- -	OR not estimated because the range of different population groups involved were not comparable

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Simpson et al. (1996) (contd)	AIDS-KS (USA, UK) Classic KS (Greece)	HIV-pos MSM	ORF 65 ELISA	84/103	ND	10.1 (1.4-73.3)	-	
		HIV-pos women with STD		17/18	ND			
		HIV-pos haemophiliac			ND			
		HIV-neg haemophiliac			ND			
		HIV-pos IVDU			2/38			
		HIV-neg IVDU			0/25			
		HIV-neg MSM with STD			ND			
		Heterosexual men			ND			
		Heterosexual women			ND			
		Children with fever			ND			
		Blood donor-UK			3/174			
		Blood donor-USA			6/117			
		Greeks			3/26			
		HIV-pos Ugandan			16/34			
HIV-neg Ugandan		7/54						
Howard et al. (1997), UK	Semen AIDS-KS	Semen AIDS Semen donors	PCR	3/15	3/9 0/115 Total 3/124			Nested PCR

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Lin et al. (1997), USA	<i>Sera:</i> AIDS-KS	<i>Sera :</i> HIV-pos adult HIV-pos children (US) HIV-neg children Haemophilic Autoimmune pts Children-acute illness Healthy adults NPC (China)	Recombinant whole ORF 65 western blot	42/47	11/54 0/12 0/10 0/25 0/25 0/25 3/28 0/25	-	-	OR not estimated because the range of different population groups involved were not comparable
Kedes et al. (1997)	<i>Sera:</i> AIDS-KS (women)	<i>Sera :</i> HIV-pos women HIV-neg women	<i>Serology :</i> BCBL-1 LANA IFA	2/2	12/302 1/84	-	-	
Davis et al. (1997)	<i>Sera:</i> AIDS-KS	<i>Sera :</i> HIV-neg blood donor HIV-pos MSM HIV-pos haemophilic	ORF 26 peptide ELISA	21/35	6/30 2/8 6/24	-	-	
Huang et al. (1997), USA	Semen AIDS-KS Semen Classic KS	Semen AIDS Semen HIV IVDU Semen HIV-neg	PCR	3/13 0/2 Total 3/15	0/4 0/5 0/7 Total 0/16	-	-	PCR hybridisation and in-situ PCR detection of amplicons
Smith et al. (1997), USA	<i>Sera:</i> AIDS-KS	<i>Sera:</i> HIV-pos Blood donor	BCPL-1 TPA induced lytic IFA	7/7	6/18 0/52	-	-	

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Lebbé et al. (1997a)	Classic KS African KS HIV-neg MSM Transplant KS	HIV- neg, skin and breast tissue	PCR	16/16 3/3 3/3 2/2 Total 25/25	0/15	-	-	Fresh frozen, nested PCR
Lebbé et al. (1997b)	PBMC classic KS PBMC African KS PBMC HIV neg MSM PBMC Transplant KS	PBMC Blood donors	PCR	9/18 2/3 1/4 0/2 Total 12/27	0/20	-	-	PCR Southern blot; nested PCR (32% of KS subjects positive with un-nested PCR)
Huang et al. (1997)	AIDS-KS HIV-neg KS	HIV-pos PBMC HIV-neg PBMC	PCR	12/12 2/2 Total 14/14	0/5 0/5 Total 0/10	-	-	Fresh frozen
Viviano et al. (1997), Sicily	Semen AIDS-KS	Semen AIDS Semen HIV-neg	PCR	1/1	1/10 6/45 Total 7/55	-	-	Nested PCR
Chatlynne et al. (1998), USA	<i>Sera:</i> AIDS-KS Classic KS	<i>Sera:</i> Blood donor HIV-pos Hodgkin lymphoma HIV-neg heterosexual HIV-neg homosexual	Whole virus lytic ELISA	57/62 67/72	10/91 18/57 0/42 1/19 2/14	-	-	This study is also included in the cohort table, as 26/31 people were seropositive against KSHV and only subsequently developed KS

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Herman et al. (1998), USA	AIDS KS Classic KS	HIV-pos, various lesions (mainly skin) HIV-neg, various lesions (mainly skin)	PCR	9/9 3/4 Total 12/13	1/15 0/14 Total 1/29	 336.0 (14.9-47561)	-	Paraffin embedded tissue; the positive control had KS at another unrelated body site
Cattani et al. (1998), Italy	<i>PBMC</i> : Classic KS Transplant KS	<i>PBMC</i> : Dermatology pts Healthy volunteers	PCR	17/26 6/7 Total 23/33	7/29 3/13 Total 10/42	7.4 (2.4-23.8)	-	Study from an area of Italy where KS is relatively frequent among HIV uninfected people
Diamond et al. (1998), USA	<i>Prostate tissue</i> : AIDS-KS Classic-KS	<i>Prostate tissue</i> : HIV-pos HIV-neg	PCR	4/5 1/1 Total 5/6	0/3 0/1 Total 0/4	-	-	Tissue obtained from trans-urethral prostatectomy
Howard et al. (1998), UK	<i>Bronchial alveolar lavage</i> : AIDS KS	<i>Bronchial alveolar lavage</i> : AIDS, no KS	PCR	24/41	0/41	-	-	All of the positive cases had pulmonary KS, whereas the 12 other cases only had cutaneous KS lesions
Mendez et al. (1998), USA	AIDS-KS Classic KS Endemic KS	Various dermatology, lung and liver specimens	PCR	5/5 6/6 1/1	0/29	-	-	Paraffin embedded
Li et al. (1998), USA	AIDS-KS Non-AIDS KS	Other vascular tumours	PCR	6/6 13/13 Total 19/19	0/23	-	-	Paraffin embedded

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Sitas et al. (1999), South Africa	<i>Sera:</i> KS among HIV infected and un-infected people	<i>Sera:</i> Other cancer patients, both HIV infected and un-infected	BCP-1	5/13	1995/3130	(0.4-2.5)	Floating absolute risks (not odds ratios), adjusted for age, sex, years of education, number of lifetime sexual partners	A study of the prevalence of antibodies against KSHV among black South African cancer patients. In the case-control analyses of KS, “controls” comprised people with other cancer sites or types
			LANA					
			IFA					
			HIV-neg					
			Titre:					
			KSHV-neg					
			(baseline group for all analyses)					
			Low-pos					
2/13	667/3130	1.5 (0.4-6.1)						
4/13	335/3130	6.2 (2.3-17.3)						
High-pos	2/13	133/3130	12.0 (2.7-53.0)					
HIV-pos	5/38	110/210	10.8 (4.0-29.1)					
KSHV-neg								
Low-pos				2/38	22/210	48.1 (9.9-234.0)		
Medium-pos				10/38	38/210	62.2 (26.1-148.0)		
High-pos	21/38	29/210	1683 (545-5194) P(trend)<0.001					
Min and Katzenstein, (1999), USA	<i>PBMC:</i> AIDS-KS	<i>PBMC:</i> HIV-pos (no KS)	PCR	5/7	18/135	16.3 (2.5-132)	-	
Boivin et al. (1999), Canada	<i>PBMC:</i> AIDS-KS	<i>PBMC:</i> HIV-pos (no KS)	PCR	12/29	4/43	6.7 (1.7-30.0)	-	
Greenblatt et al. (2001), USA	<i>Sera:</i> AIDS-KS women	<i>Sera</i> HIV-pos women	BCBL-1 LANA	7/8	82/1944	148.0 (18.1-1221.8)	-	Nested case-control study in the Women’s Interagency Health Study.

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Keller et al. (2001), Brazil	Sera and PBMC: AIDS-KS	Sera and PBMC AIDS	Viral load by PCR	29/39	1/27	7.4 (2.2-25.6)	Adjusted for CD4 count	
			<i>Serology:</i> BCP-1	31/39	5/29	17.0 (4.9-59.1)		
			LANA IFA BCP-1 lytic IFA	31/39	5/29	17.0 (4.9-59.1)		
Kazakov et al. (2002), Switzerland	AIDS-KS Transplant KS Classic KS	Various mesenchymal and related tumours	PCR	8/9 4/6 17/18 Total 29/33	1/76	543 (52-14041)	-	Paraffin embedded tissue
Cannon et al. (2003), USA	<i>PBMC:</i> KSHV seropositive AIDS-KS, MSM	<i>PBMC:</i> KSHV seropositive AIDS (no KS), MSM	PCR (all seropos to lytic and latent assays)	20/57	2/34	8.6 (1.9-39.9)	Adjusted for CD4 count	Cases had higher viral loads than controls and higher anti-KSHV antibody titres

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Newton et al. (2003), Uganda (some of these results were also reported in Ziegler et al., 2003)	<i>Sera:</i> KS in HIV infected and uninfected people	<i>Sera:</i> Other cancer patients, both HIV infected and uninfected	BCP-1	17/80	305/607	1.0	Odds ratios adjusted for age and sex	Controls, comprised people with other cancer sites or types and risk of KS increased with increasing antibody titre against KSHV, both for HIV-pos and HIV-neg people			
			LANA								
			IFA								
			HIV-neg								
			Titre:								
			KSHV-neg								
			Low-pos						24/80	167/607	2.3 (1.2-4.7)
			Medium-pos						27/80	105/167	5.7 (2.8-11.6)
			High-pos						12/80	30/607	7.1 (2.8-17.8)
											P (trend)<0.001
		HIV-pos									
		KSHV-neg	45/251	248/422	1.0						
		Low-pos	88/251	114/422	4.1 (2.6-6.3)						
		Medium-pos	95/251	46/422	10.8 (6.6-17.8)						
		High-pos	23/251	14/422	9.3 (4.3-20.2)						
							P(trend)<0.001				
Alagiozoglou et al., (2003), South Africa	<i>Sera:</i> AIDS-KS	<i>Sera:</i> HIV-pos (no KS)	<i>Serology:</i> LANA IFA	62/80	16/129	25.1 (6.6-95.5)	Adjusted for age, sex, ethnic group and residence	0/129 controls had high anti-KSHV antibody titres compared to 22/80 KS cases			
	<i>PBMC:</i> AIDS-KS	<i>PBMC:</i> HIV-pos (no KS)	PCR	44/87	6/201	15.4 (4.4-54.2)					
Bryant-Greenwood et al. (2003), USA	Pleural effusion: AIDS-KS	Pleural effusion: HIV-pos (no KS)	PCR	4/4	0/5	-	-				

Table 2.1 Case-control studies of KSHV and Kaposi Sarcoma

Reference, study location and period	Characteristics of cases and/or tissue type examined	Characteristics of controls and/or tissue type examined	Detection method	No. of exposed cases	No. of exposed controls	Relative risk (95% CI)	Adjusted potential confounders	Comments
Lager et al. (2003), South Africa	Oral KS (HIV status unknown)	Oral pyogenic granuloma (unknown HIV serostatus)	PCR	44/45	1/14	572 (26-79693)	-	Paraffin embedded tissue
Massambu et al. (2003), Tanzania	<i>PBMC</i> : AIDS-KS Endemic KS	<i>PBMC</i> : Not KS – not otherwise specified	PCR	12/14 3/5 Total 15/19	2/4	3.8 (0.3-60.9)	-	
Schwartz et al. (2003), USA	KS (HIV status not specified) Endemic KS	Various skin lesions	Immuno-histo-chemistry, using antibody to LAN-1 to	8/8 10/16	0/12	-	-	Paraffin embedded
Albrecht et al. (2004), Germany	<i>Sera</i> : AIDS-KS	<i>Sera</i> : HIV-pos	<i>Serology</i> : Latent IFA	30/33	207/398	9.2 (2.6-38.6)	-	KSHV was detected more frequently in PBMC of cases with active KS compared to those with KS in remission
			Neg	3/33	191/398	1.0		
			Low-pos	2/33	123/398	1.04 (0.1-7.7)		
			Medium-pos	24/33	73/398	20.9 (5.8-90)		
			High-pos	4/33	11/398	23.2 (3.7-154) P(trend)<0.001		
Patel et al. (2004), USA	<i>PBMC</i> KS (HIV serostatus not specified)	<i>PBMC</i> Various skin lesions	PCR Mono-clonal antibody against KSHV LAN-1 orf 73	15/33 21/21	21/260 0/35	9.4 (3.9-23.3) -	-	Paraffin embedded

Table 2.1 Case-control studies of KSHV and Kaposi Sarcoma

Reference, study location and period	Characteristics of cases and/or tissue type examined	Characteristics of controls and/or tissue type examined	Detection method	No. of exposed cases	No. of exposed controls	Relative risk (95% CI)	Adjusted potential confounders	Comments
Szalai et al. (2005a), Hungary	<i>Sera:</i> AIDS-KS	<i>Sera:</i> HIV-pos	<i>Serology</i> BCBL-1	8/12	18/115	10.8 (2.6-48.6)	-	
			LANA IFA	7/12	11/115	13.2 (3.1-59.9)		
			ORF-K8.1 ELISA	2/12	8/115	2.3 (0.3-16.9)		
	PBMC	PBMC	PCR	10/12	7/115	23.1 (5.5-104.5)		
Hammock et al. (2005), USA	AIDS-KS	AIDS-vascular tumours (non-KS)	PCR	22/24	0/13	-	-	Paraffin-embedded tissue
van der Kuyl et al. (2005), Netherlands	<i>PBMC:</i> AIDS-KS	<i>PBMC:</i> HIV-pos (no KS)	PCR	47/94	12/87	6.3 (2.9-13.9)	-	Nested in the Amsterdam cohort.
Martró et al. (2007), Spain	<i>Sera:</i> AIDS-KS	<i>Sera:</i> HIV-pos (no KS)	<i>Serology:</i> Latent IFA	98/136	105/267	4.8 (2.9-8.1)	Matched study	
Widmer et al. (2006), Switzerland	<i>Saliva:</i> AIDS-KS	<i>Saliva:</i> HIV-pos (no KS)	PCR	3/26	6/51	1.2 (0.2-6.1)	-	

Table 2.1 Case-control studies of KSHV and Kaposi Sarcoma

Reference, study location and period	Characteristics of cases and/or tissue type examined	Characteristics of controls and/or tissue type examined	Detection method	No. of exposed cases	No. of exposed controls	Relative risk (95% CI)	Adjusted potential confounders	Comments
Laney et al (2007), USA	<i>PBMC and oral fluid:</i> AIDS-KS MSM	<i>PBMC and oral fluid:</i> HIV and KSHV co-infected MSM	All men were pos to both BCBL-1 K8.1 ELISA and ORF65 ELISA Viral load measured by PCR	<i>PBMC:</i> 29/47 <i>Oral fluid:</i> 21/47	<i>PBMC</i> 19/49 <i>Oral fluid</i> 21/49	3.4 (1.8-6.4) 1.6 (0.8-3.4)	Adjusted for CD4 count and HIV viral load	All the participants were seropositive for KSHV. In follow up, viral load was higher in people with progressive disease compared to those with regressing KS
Zago et al. (2000) Brazil	40 HIV +ve KS patients	747 blood donors 73 casualty patients 136 STD patients HIV-ve, KS-ve 48 STD patients HIV+ve, KS-ve		32/40	34/747 blood donors 7/73 casualty admissions 5/136 STD patients, HIV-ve, KS-ve 7/48 HIV+ve, KS-ve	[83.9 (36.4–192.5)] [37.7 (12.7–111.6)] [104.8 (32.77–333.86)] [23.43 (7.79–70.41)]		

Note: In some early studies, among cases, tissue from KS tumour was tested for KSHV, together with tissues from various other sites. The results shown are for presence of KSHV in tumour tissue unless otherwise stated.