

Table D3: Tumor Characteristics Table for KQs 1 and 2

Author, year	Arm (n)	Clinical stage: n(%)	Tumor type: n(%)	Tumor size	Tumor side: n(%)	Tumor location: n(%)	Warm Ischemia time
Akdogan, 2012 ¹	Benign (88)	T1: 88(100)	Sac: 39(8.7) RC: 22(4.9) Others: 27(11.2)	Mean: 3.9 SD: 1.5	MUL: 0(0)	NR	NR
Akdogan, 2012 ¹	RCC (362)	T1: 362(100)	CC: 21(4.7) Pap: 5(1.1) Chro: 362(80.1)	Mean: 4.6 SD: 1.6	MUL: 0(0)	NR	NR
Antonelli, 2014 ²	Overall (506)	T1a: 506(100)	CC: 43(10.6) Others: 15(3.7)	Median: 2.5 Range: 0.1-4	NR	NR	NR
Bazzi, 2014 ³	Overall (1726)	T1a: 1726(100)	CC: 158(9.1) Sac: 162(9.4) RC: 63(3.7)	Median: 2.5 IQR: 1.8-3.2	RT: 875(50.7) LT: 851(49.3)	NR	NR
Blumenfeld, 2010 ⁴¹	Post-op (81)	T1: 44(59) T1a: 35(45) T1b: 11(14) T2: 7(9) T1 and T2: 51(68)	CC: 3(4) Chro: 75(93) Sac: 2(3) Others: 1(1)	Mean: 5.3 Range: 1-17	RT: 32(40) LT: 42(52) BIL: 7(9)	NR	NR
Blumenfeld, 2010 ⁴¹	Pre-op (81)	NR	CC: 1(1) Chro: 78(96) Sac: 1(1) Others: 2(2)	NR	RT: 32(40) LIT: 42(52) BIL: 7(9)	NR	NR
Campbell, 1997 ⁴	Overall (25)	T1: 25(100)	Pap: 1(NR) Others: 4(NR)	Mean: 3.1	NR	NR	NR
Choi, 2012 ⁵	Benign (17)	T1a: 17(100)	Sac: 8(47) RC: 6(35) Others: 3(18)	Mean: 2.41 SD: 0.73	RT: 10(59) LT: 7(41)	Exophytic: 9(53) Endophytic: 8(47)	NR
Choi, 2012 ⁵	Malignant (67)	T1a: 67(100)	CC: 5(7) Others: 1(2)	Mean: 2.74 SD: 0.65	RT: 34(51) LT: 33(49)	Exophytic: 44(66) Endophytic: 23(34)	NR
Chung, 2014 ⁶	(111)	NR	CC: 12 Sac: 2 RC: 22 Others: 6	Mean: AML without fat: 1.5, AML with visible fat: 2.2 Range: 0.8-7.5	NR	NR	NR
Chyhrai, 2010 ⁷	Overall (25)	T1a: 25(100)	Sac: 6(24)	Mean: 2.5 Range: 1.5-4 SD: 1.03	NR	NR	NR
Fujita, 2013 ⁸	Benign lesions (12)	NR	NR	Mean: 2 Median: 2 Range: 0.9-3.5 SD: 0.8	RT: 9(75) LT: 3(25)	NR	NR

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Fujita, 2013 ⁸	RCC (137)	T1a: 137(100)	NR	Mean: 2.4 Median: 2.3 Range: 0.7-4.0 SD: 0.8	RT: 73(53.3) LT: 64(46.7)	NR	NR
Halverson, 2013 ⁹	All masses (151)	T1a: 151(100)	CC: 3(1.9) Pap: 1(0.6) Sac: 0(0) Others: 22(14.5)	NR	NR	NR	NR
Halverson, 2013 ⁹	Non-benign/indeterminant biopsy (133)	T1a: 133(100)	CC: 3(2.2) Pap: 1(0.7) Sac: 0(0) Others: 4(3.0)	Mean: 2.8 SD: 0.8	NR	NR	NR
Harisinghani, 2003 ¹⁰	Overall (28)	NR	Sac: 1(NR)	NR	NR	NR	NR
Jeon, 2010 ¹¹	Benign (81)	T1: 81(100)	Sac: 11(2.9) RC: 35(9.3) Others: 35(9.3)	Mean: 2.1 Range: 0.1-4 SD: 0.9	NR	NR	Mean: 26.6
Jeon, 2010 ¹¹	RCC (295)	T1: 295(100)	CC: 14(3.7) Chro: 295(78.5)	Mean: 2.2 Range: 0.1-4 SD: 0.8	NR	NR	Mean: 29.3
Kava, 2012 ¹²	Benign (76)	T1: 76(100) T1a: 0(0) T1b: 0(0) T2: 0(0) T1 and T2: 0(0)	Sac: 26(8) RC: 29(9) Others: 21(7)	Mean: 3.7 SD: 2.5	NR	NR	NR
Kava, 2012 ¹²	Malignant (240)	T1: 240(100) T1a: 0(0) T1b: 0(0) T2: 0(0) T1 and T2: 0(0)	NR/NA	Mean: 3.4 SD: 1.5	NR	NR	NR
Keehn, 2014 ¹³	Overall (125)	NR	CC: 9(7.2) Others: 3(2.4)	Median: 2.5 IQR: 1.8-3.9	NR	NR	NR
Koo, 2013 ¹⁴	cT1 (1129)	T1: 1129(100)	CC: 69(6.1) Pap: 3(0.2) Chro: 1012(89.6) Others: 40(3.5)	Median: 3 Range: 0.6-7	RT: 74(6.5)	NR	NR
Koo, 2013 ¹⁴	cT1a (754)	T1a: 754(100)	CC: 39(5.1) Pap: 1(0.13) Chro: 658(87.2) Others: 34(4.5)	Median: 2.4 Range: 0.6-4	RT: 56(7.4)	NR	NR
Lane, 2007 ¹⁵	Overall (851)	T1: 851(100)	CC: 55(8) Chro: 6(NR) Others: 173(NR)	Median: 3 Range: 0.7-7	RT: 513(60)	NR	NR

Author, year	Arm (n)	Clinical stage: n(%)	Tumor type: n(%)	Tumor size	Tumor side: n(%)	Tumor location: n(%)	Warm Ischemia time
Leveridge, 2011 ¹⁶	NR	NR	CC: 13 Pap: 0 Chro: 208 Sac: 32 RC: 11 Others: 14	Median: 2.5 Range: 0.6-4.0	NR	NR	NR
Londono, 2013 ¹⁷	Overall (126)	NR	NR	Mean: 5.5	NR	NR	NR
Menogue, 2012 ¹⁸	Overall (250)	T1: 250(100) T1a: 250(100) T1b: 0(0) T2: 0(0) T1 and T2: 0(0)	NR	Median: 2.5 Range: 0.9-4	NR	NR	NR
Millet, 2012 ¹⁹	(187)	NR	CC: 13 Others: 1	Median: 3 Range: 0.9-4	NR	NR	NR
Mullins, 2012 ²⁰	(873)	NR	CC: 62(7.1) Sac: 77(8.8) RC: 63(7.2) Others: 84(9.6)	Malignant: 2.5, Benign: 2.3	NR	NR	NR
Murphy, 2009 ²¹	Benign (106)	T1: 106(100)	Sac: 57(53.8) RC: 21(19.8) Others: 28(16.4)	Median: 3	NR	NR	NR
Murphy, 2009 ²¹	Malignant (669)	T1: 669(100)	CC: 55(8.2) Others: 7(1)	Median: 3.7	NR	NR	NR
Neuzillet, 2003 ²²	Overall (88)	T1a: 88(100)	CC: 6(NR) Sac: 10(NR) RC: 3(NR) Others: 7(NR)	Median: 2.8 Range: 0.2-4	RT: 40(45)	NR	NR
Nishikawa, 2014 ²³	Overall (144)	T1a: 144(100)	CC: 8(5.6) Sac: 5(3.5) RC: 11(7.6) Others: 1(0.6)	Mean: 2.4 SD: 0.7	RT: 77(53.5) LT: 67(46.5)	NR	NR
Nishikawa, 2014 ²³	Group 1(with an imaging pattern typical for CCRCC) (102)	T1a: 102(100)	CC: 3(3) Sac: 3(3) RC: 4(3.9) Others: 0(0)	Mean: 2.2 Range: 1-4	RT: 57(55.9) LT: 45(44.1)	NR	NR
Nishikawa, 2014 ²³	Group 2(with an imaging pattern atypical for CCRCC) (42)	T1a: 42(100)	CC: 5(11.9) Sac: 2(4.8) RC: 7(16.7) Others: 1(2.4)	Mean: 2.5 Range: 1.5-3.9	RT: 20(47.6) LT: 22(52.4)	NR	NR
Park, 2013 ²⁵	(59)	NR	NR	Mean: 2.3 Range: 1.1-3.9	NR	NR	NR

Author, year	Arm (n)	Clinical stage: n(%)	Tumor type: n(%)	Tumor size	Tumor side: n(%)	Tumor location: n(%)	Warm Ischemia time
Park, 2011 ²⁴	Benign (114)	NR	Sac: 23(1.4) RC: 47(2.9)	Mean: 3.9 Range: 0.6-16	BIL: 0(0)	NR	NR
Park, 2011 ²⁴	Malignant (1484)	NR	CC: 93(5.8) Chro: 1468(91.9)	Mean: 4.9 Range: 0.6-24	BIL: 0(0)	NR	NR
Rosenkratz, 2014 ²⁶	(86)	NR	CC: 9 Sac: 13 RC: 8	Mean: 1.5 Range: 0.7-2.0 SD: 0.4	NR	NR	NR
Salem, 2012 ²⁷	Overall (145)	T1a: 145(100)	CC: 8(NR) Sac: 15(NR) Others: 24(NR)	Mean: 2.4 SD: 1.1	RT: 77(53.1) LT: 68(46.9)	NR	NR
Shannon, 2008 ²⁸	Overall (221)	T1: 221(100)	CC: 11(NR) Sac: 29(NR) RC: 13(NR)	Median: 2.9 Range: 1-4.9	NR	NR	NR
Sofikerim, 2009 ²⁹	(42)	NR	CC: 3 Pap: 0 Chro: 38 Sac: 1 RC: 1 Others: 2	Range: 25-140 SD: 63.9	NR	NR	NR
Soga, 2012 ³⁰	Overall (409)	NR	CC: 4(1) Pap: 2(0.5) Chro: 393(95.6) Sac: 4(1) RC: 7(1.7) Others: 7(1.7)	Mean: 5 Range: 0.8-23 SD: 3.2	RT: 252(61.3) LT: 159(38.7) MUL: 2(0.4)	NR	NR
Vasudevan, 2006 ³¹	Overall (92)	T1: 92(100)	CC: 5(NR) Sac: 14(NR) RC: 9 (NR) Others: 6(NR)	NR	NR	NR	NR
Volpe, 2008 ³²	Overall (100)	T1a: 100(100)	CC: 3(5.3) Chro: 4(NR) Sac: 7(38.9) RC: 5(27.8) Others: 12(NR)	NR	RT: NR(47) LT: NR(53)	Exophytic: NR(89)	NR
Wang, 2009 ³³	Overall (110)	T1: 110(100) T1a: 110(100)	NR	Mean: 2.7 Range: 0.5-4 SD: 0.9	RT: 50(45.5) LT: 60(54.5)	NR	NR
Xiong, 2010 ³⁴	Benign (31)	NR	Sac: 4(12.9) RC: 15(48.4) Others: 12(38.7)	NR	BIL: 0(0) MUL: 0(0)	NR	NR

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Xiong, 2010 ³⁴	Malignant (272)	NR	Chro: 272(90)	NR	BIL: 0(0) MUL: 0(0)	NR	NR
Ball, 2015 ³⁶	Overall (1009)	T1: () T1a: 1009(1009) T1b: NA(NA) T2: NA(NA) T1 and T2: NA(NA)	CC: 68(8.9) Pap: NR Chro: NR Sac: NR RC: NR Others: 56(6.2)	Mean: 2.2 Median: NR Range: NR IQR: 1.6-3 SD: NR	NR	NR	NR
Shin, 2013 ³⁵	Overall (1129)	T1: 1129(100) T1a: () T1b: () T2: () T1 and T2: NA(NA)	CC: 69(6.8) Pap: 3(0.3) Chro: NR Sac: NR RC: NR Others: 16(1.6)	NR	NR	Hilar: 651(57.7) Exophytic: 883(78.2) Endophytic: 246(21.8)	NR
Schmidbauer, 2007 ³⁷	Overall (118)	T1: () T1a: () T1b: () T2: () T1 and T2: NA(NA)	CC: 3(NR) Pap: NR Chro: NR Sac: 13(NR) RC: 2(NR) Others: 16(1.6)	Mean: 4 Median: NR Range: 1.8 IQR: NR SD: NR	NR	NR	NR
Reichelt, 2007 ³⁸	Overall (100)	T1: () T1a: () T1b: () T2: () T1 and T2: NA(NA)	CC: 4(NR) Pap: NR Chro: NR Sac: 9(NR) RC: NR Others: 7(NR)	Mean: 4.9 Median: NR Range: 2.7 IQR: 0.11-13.2 SD: NR	RT: NR LT: NR(53) BIL: NR MUL: NR	NR	NR
Prince, 2015 ³⁹	Overall (525)	T1: 525(100) T1a: () T1b: () T2: () T1 and T2: NA(NA)	CC: NR Pap: NR Chro: NR Sac: NR RC: NR Others: NR	NR	NR	NR	NR
Ball, 2015 ³⁶	Overall (1009)	T1: () T1a: 1009(1009) T1b: NA(NA) T2: NA(NA) T1 and T2: NA(NA)	CC: 68(8.9) Pap: NR Chro: NR Sac: NR RC: NR Others: 56(6.2)	Mean: 2.2 Median: NR Range: NR IQR: 1.6-3 SD: NR	NR	NR	NR

NR: Not Reported; SD: Standard Deviation; RT: Right; LT: Left; BIL: Bilateral; MUL: Multiple; RC: Renal Cell; Sac: Sarcomatoid; Chro: Chromophobe; CC: Clear Cell
No study reported positive margins