

Table S1: Study Characteristics and JBI Quality Assessment Score

Author	Year	Country	Study Design	Diagnosis method	Total	Number of Case (IgM or IgG positive)	JBI Score Result
Kassem & Morsy [1]	1991	Libya	Cross-sectional	IHA	369	175	8
El-nawawy [2]	1996	Egypt	Cross-sectional	IHA	150	64	7
Dar et al [3]	1997	United Arab Emirates	Cross-sectional	ELISA	1503	344	8
Al-mulhim & Al-qurashi [4]	2001	Saudi Arabia	Cross-sectional	MEIA	175	70	6
Ghazi et al [5]	2002	Saudi Arabia	Cross-sectional	ELISA	926	330	8
Noorbakhsh et al. [6]	2002	Iran	Cross-sectional	ELISA	140	58	8
Elnahas et al [7]	2003	Sudan	Cross-sectional	ELISA	487	171	8
Jumaian [8]	2005	Jordan	Cross-sectional	IFAT	280	133	6
Al-harthi et al [9]	2006	Saudi Arabia	Cross-sectional	ELISA	197	73	8
Sharifi-mood et al. [10]	2006	Iran	Cross-sectional	IFA	200	54	6
Mansouri et al.[11]	2007	Morocco	Cross-sectional	ELISA	2456	1242	7
Iqbal & Khalid [12]	2007	Kuwaiti	Cross-sectional	ELFA	224	150	7
Saeedi & Marjani [13]	2007	Iran	Cross-sectional	ELISA	300	145	8
Abdi et al. [14]	2008	Iran	Cross-sectional	IFA	553	248	8
Fallah et al. [15]	2008	Iran	Cross-sectional	IFA	576	193	8
Ibrahim et al. [16]	2009	Egypt	Cross-sectional	ELISA	101	52	8
Nijem & Al-Amleh [17]	2009	Palestine	Cross-sectional	ELISA	204	57	7
Al-Nahari et al. [18]	2010	Yemen	Cross-sectional	ELISA	463	249	7
(Mohammad et al. [19]	2010	Saudi Arabia	Cross-sectional	ELISA	554	334	8
Sellami et al. [20]	2010	Tunisia	Cross-sectional	ELISA	40566	15879	8

Almogren [21]	2011	Saudi Arabia	Cross-sectional	IHA	2176	825	8
Mohammed [22]	2011	Iraq	Cross-sectional	ELISA	212	80	8
Amany & and Merwad [23]	2012	Egypt	Cross-sectional	IHA	100	40	8
Saad M. Bin Dajem & Almushait [24]	2012	Saudi Arabia	Cross-sectional	ELISA	137	62	7
El Deeb et al. [25]	2012	Egypt	Cross-sectional	ELFA	323	218	8
Maha H. Elamin [26]	2012	Sudan	Cross-sectional	ELISA	188	81	6
Hajsoleimani et al. [27]	2012	Iran	Cross-sectional	ELISA	500	189	8
Babaie et al. [28]	2013	Iran	Cross-sectional	ELISA	419	144	8
(Ben Abdallah et al. [29]	2013	Tunisia	Cross-sectional	ELISA	2070	1123	7
Fakhfakh et al. [30]	2013	Tunisia	Cross-sectional	ELISA	2351	1121	8
Panah Abolghasem Siyadat et al. [31]	2013	Iran	Cross-sectional	ELISA	1057	796	8
Abdel-Raouff & Elbasheir [32]	2014	Sudan	Cross-sectional	ELISA	163	33	7
Ahmed et al. [33]	2014	Egypt	Cross-sectional	ELISA	100	63	7
Almushait et al. [34]	2014	Saudi Arabia	Cross-sectional	ELISA	487	235	8
Aqeely et al. [35]	2014	Saudi Arabia	Cross-sectional	ELISA	195	51	8
Ashankytty [36]	2014	Saudi Arabia	Cross-sectional	ELISA	6076	630	7
Hadi et al. [37]	2014	Iran	Cross-sectional	ELISA	785	135	8
M Laboudi et al [38]	2014	Morocco	Cross-sectional	ELISA	1169	551	8
(Sharbatkhori et al. [39]	2014	Iran	Cross-sectional	ELISA	555	248	7
Yad Yad et al [40]	2014	Iran	Cross-sectional	ELISA	501	144	8
Elsafi et al. [41]	2015	Saudi Arabia	Cross-sectional	CMIA	400	126	7

Kamal et al. [42]	2015	Egypt	Cross-sectional	ELISA	240	78	7
Ahmadpour et al.[43]	2015	Iran	Cross-sectional	ELISA	200	63	8
Akhlaghi et al. [44]	2016	Iran	Cross-sectional	ELISA	468	95	7
Al-Eryani et al. [45]	2016	Yemen	Cross-sectional	ELISA	593	311	8
Alghamdi et al. [46]	2016	Saudi Arabia	Cross-sectional	ELISA	203	79	7
Bassiony et al. [47]	2016	Egypt	Cross-sectional	ELISA	382	223	8
Imam et al. [48]	2016	Saudi Arabia	Cross-sectional	ELISA	150	32	7
Majid et al. [49]	2016	Pakistan	Cross-sectional	IFA	733	135	8
(Mohaghegh et al. [50]	2016	Iran	Cross-sectional	ELISA	350	122	7
Mohamed et al. [51]	2016	Saudi Arabia	Cross-sectional	ELISA	326	74	8
Rostamzadeh Khameneh et al. [52]	2016	Iran	Cross-sectional	ELISA	156	44	7
(Ahmadpour et al. [53]	2017	Iran	Cross-sectional	ELISA	264	81	8
Alanazi et al. [54]	2017	Saudi Arabia	Cross-sectional	ELISA	340	55	7
Garedaghi & Firozivand [55]	2017	Iran	Cross-sectional	ELISA	200	82	8
Ibrahim et al. [56]	2017	Egypt	Cross-sectional	ELISA	364	123	8
(Majda Laboudi & Sadak [57]	2017	Morocco	Cross-sectional	ELISA	128	59	6
Mahdy et al. [58]	2017	Yemen	Cross-sectional	ELISA	359	178	7
Naghili et al. [59]	2017	Iran	Cross-sectional	ELISA	391	267	7
Nahouli et al. [60]	2017	Lebanon	Cross-sectional	ELISA	11000	2471	7
Nazir [61]	2017	Pakistan	Cross-sectional	ELISA	232	132	8
Norouzi et al. [62]	2017	Iran	Cross-sectional	ELISA	2000	173	8

Shieh et al. [63]	2017	Iran	Cross-sectional	ELISA	261	127	7
Shirdel et al. [64]	2017	Iran	Cross-sectional	ELISA	440	189	8
Tlamcani et al. [65]	2017	Morocco	Cross-sectional	CMIA	3440	1367	7
Aleem et al. [66]	2018	Pakistan	Cross-sectional	LAT	360	170	8
(Eshratkhah Mohammadnejad et al. [67])	2018	Iran	Cross-sectional	ELISA	620	117	7
(Fallahizadeh et al. [68])	2018	Iran	Cross-sectional	ELISA	276	85	7
Rashno et al. [69]	2018	Iran	Cross-sectional	ELISA	98	34	7
Sardarian et al. [70]	2018	Iran	Cross-sectional	ELISA	653	167	6
Abdul-Ghani et al. [71]	2019	Yemen	Cross-sectional	ELISA	379	71	6
(Al-Adhroey et al. [72])	2019	Yemen	Cross-sectional	ELISA	420	89	7
Khademi et al. [73]	2019	Iran	Cross-sectional	ELISA	360	103	8
Rashno et al. [74]	2019	Iran	Cross-sectional	ELISA	98	34	8
Mosawi et al. [75]	2019	Afghanistan	Cross-sectional	ELISA	431	207	7
(Rahmati-Balaghaleh et al. [76])	2019	Iran	Cross-sectional	ELISA	208	114	7
Sadiqui et al. [77]	2019	Pakistan	Cross-sectional	IFFT	500	54	6
Sharifi et al. [78]	2019	Iran	Cross-sectional	ELISA	250	76	7
Abdelbaset et al. [79]	2020	Egypt	Cross-sectional	ELISA	96	29	7
Al-Hakami et al. [80]	2020	Saudi Arabia	Cross-sectional	ELISA	190	52	7
Ali et al. [81]	2020	Pakistan	Cross-sectional	ELISA	222	30	6
Edrees & Ibrahim [82]	2020	Iraq	Cross-sectional	ELISA	150	40	7
(Hoummadi et al. [83])	2020	Morocco	Cross-sectional	ELISA	5578	1607	8
(Jahantigh et al. [84])	2020	Iran	Cross-sectional	ELISA	90	13	8

Mohajab et al. [85]	2020	Saudi Arabia	cross-sectional	ELISA	2754	38	8
Qamer et al. [86]	2020	Saudi Arabia	Cross-sectional	ELISA	306	102	7
Raissi et al. [87]	2020	Iran	Case-control	ELISA	189	75	8
(Al-Shammari & Iqbal [88])	2021	Kuwaiti	Cross-sectional	ELISA	280	41	7
Al-Yami et al. [89]	2021	Saudi Arabia	Cross-sectional	ELISA	500	105	7
(Majda Laboudi et al. [90])	2021	Morocco	Cross-sectional	ELISA	637	299	8
Mahmood & Kahya [91]	2021	Iraq	Case-control	ELISA	109	43	7
Soltani et al. [92]	2021	Iran	Cross-sectional	ELISA	88	30	7
Yusuf et al. [93]	2021	Somalia	Cross-sectional	ELISA	307	159	7
Nabizadeh et al. [94]	2022	Iran	Cross-sectional	CLIA	2726	722	8
Hassan et al. [95]	2023	Somalia	Cross-sectional	ELISA	403	182	7

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