

Table 1: All studies included in the review

Sl no	Author	Age	Sex	Spinal level	Microrganism	No of patient	Follow up [months]	Medical therapy	Surgical intervention	Diagnosis	Outcome
1	Son et al. 2007 [26]	46	M	C4-5 L3-5 T2-4	Aspergillus (A.) spp.	1				Tuberculous spondylitis	
2	D'Agostino et al. 2010 [27]	66	F	C6-7	<i>Candida (C.) glabrata</i>	6	2.75	Amphotericin B		Infectious spondylodiscitis	A
		74	M	L1-2	<i>C. albicans</i>		2	Fluconazole	Spinal surgery		A
		53	M	L2-3	<i>C. albicans</i>		2.75	Fluconazole and amphotericin B			A
		60	M	L4-5	<i>A. fumigatus</i>		6.5	Voriconazole			A
		61	M	L4-5	Aspergillus spp.		7.5	Voriconazole			A
		60	F	T12-L4	<i>C. albicans</i>		8.25	Fluconazole			A
3	Huang et al. 2019 [28]	64	F	C4-6	<i>C. albicans</i>	1		Fluconazole	Corpectomy of C4, C5, C6 with radial resection of tissues	Infective spondylodiscitis at C5-6	A
4	El Khoury et al. 2018 [29]	53	F	C4-5	<i>C. glabrata</i>	1	3	Micafungin and voriconazole		Spondylodiscitis	A
5	Raj et al. 2013 [6]	45	F	L5-S1	<i>A. fumigatus</i>	1	9	Itraconazole	Posterior decompression, laminectomy	Paradiscal infective spondylodiscitis	A
6	Yang et al. 2019 [30]	74	M	L3-S1	<i>C. albicans</i>	9	0.5	Caspofungin, flucytosine, fluconazole		Fungal spinal epidural abscess	D
		40	M	L5-S1	<i>C. albicans</i>		19.25	Fluconazole	Microdiscectomy		A
		77	M	L3-4	<i>C. glabrata</i>			Micafungin and fluconazole	Laminectomy [posterior]		D
		21	F	L3-4	<i>C. albicans</i>		7.25	Fluconazole and caspofungin	Debridement and Drainage		A
		54	M	T11-12	<i>C. albicans</i>		10.75	Amphotericin B, nafcillin, fluconazole			A
		68	M	T11-12	<i>C. albicans</i>		2.5	Flucytosine, micafungin, fluconazole			D
		48	F	T3-5	<i>A. fumigatus</i>		2.25	Amphotericin B and voriconazole	Laminectomy, corpectomy and instrumentation		A
		51	M	T5-10	<i>A. fumigatus</i>			Amphotericin B	Laminectomy		D
		63	F	C6-T1	<i>C. albicans</i>		25.5	Amphotericin B	Laminectomy, corpectomy and iliac crest bone fusion		A
7	Boyd et al. 2018 [31]	71	F	L5-S1	<i>C. albicans</i>	1	12	Fluconazole		Vertebral osteomyelitis	A
8	Kroot and Wouters 2007 [32]	28	M	L5-S1	<i>C. albicans</i>	1		Fluconazole		L5-S1 Spondylodiscitis	A
9	Iwata et al. 2014 [18]	55	M	L5-S1	<i>Paecilomyces variotii</i>	4	26	Amphotericin B and itraconazole	Discectomy	Disc herniation and spondylodiscitis	A

		56	M	L3-4	<i>C. albicans</i>		92	Fluconazole and amphotericin B	Posterolateral endoscopic debridement and irrigation	Spinal infection	A
		72	M	L3-4	<i>C. albicans</i>		24	Micafungin	Bi-portal approach		
		56	M	L2-3	<i>C. albicans</i>		28	Voriconazole	Posterolateral endoscopic debridement and irrigation		
10	Oksi et al. 2013 [12]	37	M	L5-S1	<i>C. dubliniensis</i>	1	3	Amphotericin B and fluconazole		Spondylodiscitis	A
11	Grimes et al. 2012 [33]	63	F	L5-S1	<i>C. albicans</i>	1	3	Fluconazole and Mmicafungin	L4-5 discectomy and L5 corpectomy	Osteomyelitis and discitis	A
12	Salzer et al. 2015 [34]	47	M	L4-S1	<i>C. dubliniensis</i>	1		Fluconazole		Spondylodiscitis and spinal abscess	A
13	de Matos et al. 1998 [35]	45	M	L5-S1	<i>C. albicans</i>	1		Fluconazole		L5/S1 Spondylodiscitis	A
14	Yu et al. 2016 [16]	76	M	L5-S1	<i>C. albicans</i>	1	12	Fluconazole	Auto-bone graft and interbody fixation	Spondylodiscitis	A
15	Jorge et al. 2012 [36]	75	M	L5-S1	<i>C. albicans</i>	1	6	Fluconazole and amphotericin B		L5/S1 Spondylodiscitis with a spinal epidural abscess	A
16	Zou et al. 2015 [37]	56	M	L5-S1	<i>A. fumigatus</i>	15	51	Amphotericin B and itraconazole	Anterior radical debridement and interbody fusion	Fungal discitis	A
		31	F		<i>A. fumigatus</i>		30	voriconazole			
		32	F		<i>Cryptococcus (Cr.) neoformans</i>		28	amphotericin B			
		57	F		<i>Cr. neoformans</i>		36	Fluconazole			
		59	M		<i>C.albicans</i>		36	Amphotericin B			
		56	M	L3-5	<i>A. fumigatus</i>		51	Amphotericin B and itraconazole	Anterior radical debridement, interbody fusion and posterior instrumented fusion		
		31	F	L3-5	<i>A. fumigatus</i>		30	Voriconazole			
		42	M	L4-5	<i>A. fumigatus</i>		45	Voriconazole			
		62	M	L3-4	<i>A. fumigatus</i>		24	Amphotericin B and itraconazole			
		32	F	L3-5	<i>Cr. neoformans</i>		28	Amphotericin B	Anterior radical debridement and interbody fusion		
		57	F	L3-5	<i>Cr. neoformans</i>		36	Fluconazole			
		48	M	L3-4	<i>Cr. neoformans</i>		48	Fluconazole			
		61	M	L3-5	<i>C. albicans</i>		32	Amphotericin B	Anterior radical debridement, interbody fusion and posterior instrumented fusion		
		56	F	L3-4	<i>C. albicans</i>		30	Amphotericin B	Anterior radical debridement and interbody fusion		
		59	M	L3-5	<i>C. albicans</i>		36	Amphotericin B			

17	Zhong et al. 2023 [38]	37	M	S2-4	<i>Cr. neoformans</i>	1	8	Fluconazole	Sacral debridement and negative drainage	Cryptococcal osteomyelitis of the sacrum	A
18	Ur-Rahman et al. 2000 [39]	40	F	T6-8	<i>Aspergillus</i> spp.	1		Amphotericin B		Osteomyelitis	D
19	Vaishya and Sharma 2004 [40]	35	F	T10-12	<i>Aspergillus</i> spp.	1		Amphotericin B	T11 Corpectomy	Vertebral osteomyelitis with extradural abscess	D
20	Sethi et al. 2012 [41]	25	M	L4-5	<i>Aspergillus</i> spp.	2	12	Itraconazole	Posterior decompression and interbody fusion with tricortical bone graft from the iliac crest	Fungal osteomyelitis	A
		19	M	T10-11	<i>Aspergillus</i> spp.			Itraconazole	Transthoracic T10-T11 corpectomy	Osteomyelitis	A
21	Eisen et al. 2000 [42]	73	M	T8-9	<i>C. tropicalis</i>	1	9	Amphotericin B	Surgical decompression	Vertebral osteomyelitis	A
22	Derkinderen et al. 2000 [43]	32	F	T6-9	<i>C. albicans</i>	1	11	Amphotericin B and flucytosine		Candidal spondylodiscitis and epidural abscess	A
23	Sebastiani and Galas 2001 [44]	67	M	T6-9	<i>C. tropicalis</i>	1		Fluconazole		Spondylodiscitis	A
24	Rachapalli et al. 2010 [45]	48	F	T6-7	<i>Candida</i> spp.	1		Fluconazole and flucytosine		Discitis	A
25	Rossel et al. 1998 [46]	20	F	T11-12	<i>C. albicans</i>	1	12	Fluconazole		Spondylitis/discitis	A
26	Peman et al. 2006 [47]	62	M	T5-6	<i>C. krusei</i>	1	6	Caspofungin and voriconazole		Spondylodiscitis	D
27	Saigal et al. 2004 [7]	31	F	L3-5	<i>A. fumigatus</i>	1		Amphotericin B	T9-T11 Laminectomy	Discitis and osteomyelitis	A
				T9-11	<i>A. fumigatus</i>			Amphotericin B	T9-T11 Laminectomy	Intradural abscess	
28	Jiang et al. 2013 [48]	40	F	T1-3	<i>A. nidulans</i>	1	16	Voriconazole	Decompression laminectomy of T1-T3	Osteomyelitis	A
29	Chia et al. 2005 [49]	50	M	T7-8	<i>C. tropicalis</i>	1	3	Amphotericin B	Anterior decompression	Spondylodiscitis at T7/T8 associated with osteomyelitis of T7 and T8 vertebrae	A
30	Ackerman and Bayley 1990 [50]	66	M	T6-7	<i>C. albicans</i>	1		Amphotericin B		Spondylodiscitis	A
31		45	M	T4-5	<i>Aspergillus</i> spp.	3		Amphotericin B		Spondylodiscitis of T4-T5	A

	van Ooij et al. 2000 [51]	39	F	L4-5	<i>A. fumigatus</i>			Amphotericin B	Lumbotomy	AML	D
		69	M	T12-L1	<i>A. fumigatus</i>			Amphotericin B and flucytosine	Decompression	Spondylodiscitis at T12-L1	D
32	Ugariza et al. 2004 [52]	70	M	T8-9	<i>C. albicans</i>	1	4	Fluconazole	Curettage and debridement followed by grafting with autologous bone	T8 –T9 Spondylodiscitis	A
33	El-Zaatari et al. 2002 [53]	65	M	T11-12	<i>C. albicans</i>	1	12	Fluconazole	Surgical debridement, fixation, and Bone grafting of the lesion	Osteomyelitis of the spine	A
34	Friedman and Simon 1987 [54]	77	M	T9-10	<i>C. paratropicalis</i>	3	24	Amphotericin B		Discitis and osteomyelitis	A
		79	M	L4-5	<i>C. pseudotropicalis</i>		24	Amphotericin B		Vertebral osteomyelitis	A
		44	M	L4-5	<i>C. parapsilosis</i>		18	Amphotericin B		Vertebral osteomyelitis	A
35	Torres-Ramos et al. 2004 [55]	69	F	T8-9	<i>C. tropicalis</i>	1		Amphotericin B		Spondylodiscitis	A
36	Pennisi et al. 1985 [56]	77	M	T9-10	<i>C. paratropicalis</i>	2		Amphotericin B	Right costo-transversectomy of T10 with luqus rod insertion	Diskitis	A
		79	M	L3-4	<i>C. tropicalis</i>			Amphotericin B and flucytosine		Diskitis	A
37	Hennequin et al. 1996 [57]	52	F	T10-11	<i>C. albicans</i>	2	47	Fluconazole		Spondylodiscitis with abscess	A
		61	M	L3-4	<i>C. albicans</i>		17	Fluconazole		Spondylodiscitis	A
38	Mullins et al. 1993 [58]	38	M	T8-9	<i>C. albicans</i>	1		Amphotericin B		Osteomyelitis	A
39	Crane 2018 [59]	27	M	T3-8	<i>C. albicans</i>	1		Fluconazole	Laminectomy of T6–T8	Intrathecal spinal abscesses	A
40	Kashimoto et al. 1986 [60]	50	M	T7-8	<i>C. tropicalis</i>	1	21		T6-7 Thoracotomy	Vertebral osteomyelitis and discitis	A
41	Liu et al. 2017 [61]	65	M	T4-6	Histoplasma spp.	1	26	Itraconazole	Thoracic spinal surgery	Vertebral histoplasmosis	A
42	Lee et al. 2017 [62]	66	F	T10-11	<i>C. albicans</i>	1		Fluconazole	Open curettage and spinal stabilization	Spondylodiscitis with abscess	A
43	Kelesidis and Tsiodras 2012 [63]	41	M	T11-12	<i>C. albicans</i>	1	10	Caspofungin		Spondylodiscitis	A
44	Bruns et al. 1986 [64]	63	F	T7-8	<i>C. tropicalis</i> and <i>Nakaseomyces glabratus</i>	1	18	Amphotericin B and flucytosine	Costotransversectomy	Spondylitis	A
45	Kulcheski et al. 2015 [65]	39	M	T4-6	<i>C. albicans</i>	1	12	Fluconazole and ciprofloxacin	Corpectomy from T4-6 with autologous iliac graft replacement	Thoracic spondylodiscitis	A

46	Neale et al. 1987 [66]	36	F	T10-11	<i>C. albicans</i>	1	6	Flucytosine and amphotericin B		Vertebral osteomyelitis	A
47	Relvas-Silva et al. 2020 [67]	66	F	T8-10	<i>C. albicans</i>	1	18	Amphotericin B and anidulafungin	Transpedicular screw fixation between T5-T6 and T11-T12 for stability and anterior thoracic corpectomy of T9 with rib bone grafting	Spondylodiscitis	A
48	Takagi et al. 2019 [68]	74	M	T11-12	<i>A. terreus</i>	1	24	Voriconazole	Posterior partial laminectomy at T11 and anterior fusion at T11 and T12	Spondylodiscitis	A
49	Bhat et al. 2021 [69]	52	M	T10-12	<i>Cr. neoformans</i>	1		Amphotericin and fluconazole		Pyogenic spondylodiscitis	A
50	Edwards et al. 1975 [70]	74	F	T10-11	<i>C. albicans</i>	2		Amphotericin B		Osteomyelitis	D
		56	M	T9-10				Flucytosine	Spinal fusion		A
51	Dai et al. 2020 [71]	67	M	T3-5	<i>A. fumigatus</i>	6	20	Voriconazole		Aspergillus spondylitis	A
		50	F	L3-4	<i>A. fumigatus</i>		24	Voriconazole	Laminectomy, debridement, instrumentation		A
		48	M	L4-5	<i>A. fumigatus</i>		15	Voriconazole	Laminectomy, debridement, instrumentation		A
		43	M	L4-5	<i>A. niger</i>		20	Voriconazole	Laminectomy, debridement, instrumentation		A
		66	M	L2-3	Aspergillus spp.		18	Voriconazole	Laminectomy, debridement, instrumentation		A
		68	M	T12-L2	<i>A. fumigatus</i>		24	Voriconazole	Laminectomy, debridement, decompression, instrumentation		A
52	Tokuyama et al. 2002 [5]	44	F	T12-L1	<i>C. albicans</i>	1		Itraconazole	Total corpectomy of T12 and L1	Spondylodiscitis	A
53	Williams et al. 1999 [72]	51	M	T12-L1	Candida spp.	3		Amphotericin and fFluconazole		Candida osteomyelitis	A
		49	M	L2-4	<i>C. albicans</i>			Amphotericin	L2–L3 and L3–L4 Discectomy and vertebral debridement	Fungal spinal osteomyelitis	A
		54	F	L2-4	Aspergillus spp.			Amphotericin		Fungal spinal osteomyelitis	A
54	Lopes et al. 2021 [73]	72	M	T9-L4	<i>C. tropicalis</i>	1		Micafungin	T9-L4 Laminectomy, arthrodesis and abscess drain	Thoracolumbar spondylodiscitis	D
55	Er and Yilmaz 2020 [74]	54	F	T12-L1	<i>C. parapsilosis</i>	1		Fluconazole		Spondylodiscitis	A

56	Sugar et al. 1990 [75]	70	M	T12-L1	<i>C. tropicalis</i>	1	14	Amphotericin B and fluconazole	Rod stabilization of the vertebral column	Vertebral osteomyelitis with epidural abscess	A
57	Rashid et al. 2022 [76]	58	F	L4,5	<i>Aspergillus</i> spp.	1		Voriconazole and micafungin		Foraminal stenosis	A
58	Yoon and Kim 2015 [77]	53	M	L2-3	<i>Aspergillus</i> spp.	1	7	Vancomycin and amphotericin B	Total laminectomy of L2	Infectious spondylodiskitis	A
59	Upadhyay et al. 2020 [78]	45	M	L4-5	<i>A. flavus</i>	5		Voriconazole	MI-PLIF	Postoperative fungal discitis	A
		59	M	L4-5	<i>A. flavus</i>			Voriconazole			A
		51	M	L3-4	<i>A. flavus</i>			Voriconazole			A
		61	M	L4-5	<i>C. albicans</i>			Amphotericin B and itraconazole			A
		60	F	L4-5	<i>Penicillium decumbens</i>			Amphotericin B and itraconazole			A
60	Seravalli et al. 2003 [79]	64	M	L2-4	<i>C. glabrata</i>	1	16	Amphotericin B	Corpectomy of L2-L3	vertebral osteomyelitis	A
61	Schilling et al. 2008 [80]	58	M	L2-3	<i>C. krusei</i>	1	12	Caspofungin		Progressive spondylodiscitis	A
62	Oichi et al. 2015 [81]	79	M	L3-4	<i>C. tropicalis</i>	1	12	Micafungin and fluconazole		Intervertebral abscess	D
63	Herzog et al. 1989 [82]	88	M	L4-5	<i>C. tropicalis</i>	1	6	Amphotericin B and ketoconazole		Intervertebral diskitis	A
64	Shaikh et al. 1980 [83]	67	M	L1-2	<i>C. albicans</i>	1		Amphotericin B and flucytosine		Osteomyelitis	D
65	Hadjipavlo u et al. 1998 [84]	34	F	L2-4	<i>Blastomyces dermatitides</i>	1	7	Fluconazole and amphotericin B	Total excision of the second lumbar vertebral body	Disseminated blastomycosis	A
66	Savall et al. 2014 [85]	22	M	L1-2	<i>C. albicans</i>	1		Fluconazole		Spondylodiscitis	A
67	Palmisano et al. 2011 [8]	48	F	L3-4	<i>C. sake</i>	1	6	Fluconazole		Spondylodiscitis	A
68	Duplan et al. 2022 [86]	50	M	L2-3	<i>C. parapsilosis</i>	1	12	Fluconazole	L2 and L3 Laminectomy	Osteomyelitis	A
69	Chen and Lin 2012 [9]	59	M	L3-5	<i>C. parapsilosis</i>	1	12	Fluconazole	L2-L5 Laminectomy	Discitis and osteomyelitis	A
70	Werner et al. 2011 [87]	40	F	L3-4	<i>C. lusitanae</i>	1	24	Fluconazole and amphotericin B	Left L3 and L4 hemilaminectomy with L3–L4 discectomy	Osteomyelitis	A

71	Dailey and Young 2011 [88]	69	M	L1-2	<i>C. glabrata</i>	1	3	Amphotericin B		Discitis, Osteomyelitis and epidural abscess	A
72	Fogarty 1983 [89]	40	F	L1-2	<i>C. albicans</i>	1	36	Amphotericin B		Osteomyelitis	A
73	Holzman and Bishko 1971 [90]	41	F	L4-5	<i>C. stellatoidea</i>	1		Amphotericin B		Spondylitis	A
74	Chen et al. 2013 [91]	41	M	L3-4	<i>C. albicans</i>	1	9	Fluconazole	Left laminotomy over L3 and discectomy over L3–4	Spondylosis of lumbar spine	A
75	Rieneck et al. 1996 [92]	56	M	L3-4	<i>C. albicans</i>	1		Fluconazole		Spondylitis	A
76	Gagliano et al. 2018 [93]	66	M	L3-4	<i>C. glabrata</i>	1		Anidulafungin	Debridement and stabilization of the vertebrae	Spondylodiscitis	A
77	Hayes et al. 1984 [94]	67	M	L1-2	<i>C. tropicalis</i>	1				Discitis and Vertebral osteomyelitis	A
78	Alvarenga et al. 2016 [95]	68	M	L4-5	<i>Paracoccidioides brasiliensis</i>	1	36	Sulfamethoxazole and trimethoprim		Spondylodiscitis	A
79	Munk et al. 1997 [96]	67	M	L2-3	<i>C. albicans</i>	1		Amphotericin B	Retroperitoneal vertebral body resection, abscess drainage, and strut grafting	Osteomyelitis and disc space infection	A
80	Wang et al. 2022 [97]	62	F	L4-5	<i>C. tropicalis</i>	1	30	Flucytosine and amphotericin B	Laminectomy and pseudocystectomy	Fungal spondylodiscitis, secondary lumbar spinal stenosis, and subsequent discal pseudocyst causing acute cauda equina syndrome	A
81	Overgaauw et al. 2020 [98]	78	M	L4-5	<i>C. krusei</i>	1	6	Anidulafungin and voriconazole		Spondylitis	A
82	Supreeth et al. 2020 [99]	50	M	L4-5	<i>C. auris</i>	1	6	Caspofungin	Posterior decompression, debridement, and stabilization	Spondylodiscitis	A