

Supplemental information 1.

Results of the 45 cases identified through the systematic review, showing demographics, immunocompetence, echo findings, outcome and time of diagnosis

Ref		Demographics	Immunodeficiency	ECHO	Treatment	Outcome	Diagnosis	Pathology
4	1	33 / F	ALL	Pericardial effusion	Amphotericin B/Itraconazole	D	AM	Pericardium
6	2	24 / M	-	EF 25%	-	D	PM	Myocardium/Endocardium
6	2	23 / M	-	-	-	D	PM	Myocardium/Pericardium
7	3	22 / M	ALL	RA thrombus	-	D	PM	Endocardium
8	4	50 / F	RT	Interventricular mass	Surgery	R	-	Endocardium
9	5	39 / F	LT steroids (Sjogrens/IgA nephropathy)	Mass on LV	Surgery	R	-	Endocardium
10	6	70 / F	BCLL	Mass on LV	Surgery/Voriconazole/Micafungin	D	AM	Endocardium
11	7	19 / F	-	Mass on RV	Amphotericin B	D	AM	Endocardium
12	8	41 / M	Liver/SB/Pancreas/Stomach Transplant	Abnormality of RA	Surgery/Caspofungin/Voriconazole/Amphotericin B (post op)	R	-	Endocardium
13	9	48 / F	AML	Mass on LV	-	D	AM	Myocardium
14	10	60 / F	EGPA	-	-	D	PM	Myocardium
15	11	58 / M	-	-	-	D	PM	Myocardium
16	1	45 / M	LT steroids (asthma)	-	Amphotericin B	D	PM	Myocardium

	2							
17	1 3	64 / M	-	-	Antifungal (not specified)	D	PM	Myocardium
18	1 4	28 / F	LT steroids (SLE)	EF 10-15%	Amphotericin B	D	PM	Myocardium
19	1 5	69 / M	-	-	-	D	PM	Myocardium
20	1 6	37 / M	OLT (PBC)	Pericardial effusion	Amphotericin B	D	PM	Myocardium
21	1 7	75 / M	LT steroids	Pericardial effusion	-	D	PM	Myocardium
22	1 8	55 / M	-	-	-	D	PM	Myocardium
23	1 9	66 / M	RT	-	-	D	PM	Myocardium
24	2 0	45 / M	BMT	-	Amphotericin B	D	PM	Myocardium
25	2 1	61 / F	LT steroids (CLL)	-	Amphotericin	D	AM	Myocardium
25	2 1	29 / F	RT	-	Amphotericin	D	AM	Myocardium/Pericardium
25	2 1	27 / F	LT steroids (CML)	Pericardial effusion	Amphotericin	D	AM	Pericardium
25	2 1	29 / F	BMT (AML)	-	Amphotericin	D	AM	Pericardium
26	2 2	66 / M	Lung CA	-	-	D	PM	Myocardium
26	2 2	60 / M	-	-	-	D	PM	Myocardium
27	2	31 / M	AIDS	Mass on LV	Flagyl	D	AM	Myocardium/Endocardium

	3							
28	2 4	29 / F	LT steroids (ALD)	-	Surgery/Amphotericin B	D	AM	Myocardium/Endocardium
29	2 5	36 / M	LT steroids (erythema nodosum)	-	Amphotericin B	D	AM	Myocardium/Endocardium
30	2 6	18 / M	Splenectomy (primary splenic neutropaenia)	-	-	D	PM	Myocardium/Endocardium
31	2 7	38 / M	Aplastic anaemia	-	Amphotericin B	D	PM	Myocardium/Pericardium
32	2 8	18 / M	OLT	LV wall (posterior) mass	Anidulafungin/Voriconazole	R	-	Myocardium/Pericardium
33	2 9	40 / M	-	Pericardial effusion	-	D	PM	Myocardium/Pericardium/Endocardium
34	3 0	30 / M	-	Atrial wall and septal thickening	Variconazole/Amphotericin B	R	-	Myocardium/Pericardium/Endocardium
35	3 1	45 / M	RT	-	-	D	PM	Myocardium/Pericardium/Endocardium
36	3 2	34 / M	BMT	Pericardial effusion	Amphotericin B	D	AM	Myocardium/Pericardium/Endocardium
37	3 3	63 / M	OLT (HBV)	-	Voriconazole/Caspofungin	D	AM	Pericardium
38	3 4	68 / M	-	-	-	D	PM	Pericardium
39	3 5	33 / M	-	-	Amphotericin B/Ketconazole	R	-	Pericardium
40	3 6	67 / M	TB	Pericardial effusion	-	R	-	Pericardium

				and thickening				
41	37	38 / F	BMT	Pericardial effusion	Amphotericin B	D	AM	Pericardium
42	38	40 / F	CGD	Pericardial effusion	Variconazole/caspofungin	R	-	Pericardium
43	39	31 / M	ALL	No pathology	Amphotericin	D	PM	Pericardium
44	40	33 / M	AIDS	-	-	D	AM	Pericardium

ALL = Acute Lymphoblastic Leukaemia; RT = Renal Transplant; LT = Long Term; BCLL = B-Cell Chronic Lymphocytic Leukaemia; AML = Acute Myeloid Leukaemia; EGPA = Eosinophilic Granulomatosis with Polyangiitis; SLE = Systemic Lupus Erythematosus; OLT = Orthotopic Liver Transplant; PBC = Primary Biliary Cirrhosis; BMT = Bone Marrow Transplant; CLL = Chronic Lymphocytic Leukaemia; CML = Chronic Myeloid Leukaemia; CA = Cancer; AIDS = Acquired Immune Deficiency Syndrome; ALD = Alcohol-related Liver Disease; HBV = Hepatitis B Virus; CGD = Chronic Granulomatous Disease; EF = Ejection Fraction; RA = Rheumatoid Arthritis; LV = Left Ventricle; RV = Right ventricle; D = Death; R = Resolved; AM = Antemortem; PM = Postmortem

References:

1. Le Moing V, Lortholary O, Timsit JF, et al. Aspergillus pericarditis with tamponade: report of a successfully treated case and review. Clin Infect Dis. 1998 Feb;26(2):451-60.
2. Vaideeswar P. Aspergillus pancarditis manifesting as hospital-acquired infection: report of two cases and review of literature. Cardiovasc Pathol. 2010 Nov-Dec;19(6):e253-7. doi: 10.1016/j.carpath.2009.11.003. Epub 2009 Dec 16.
3. Challa S, Prayaga AK, Vemu L, et al. Fungal endocarditis: an autopsy study. Asian Cardiovasc Thorac Ann. 2004 Jun;12(2):95-8.
4. Jones RE, Groom KM, Singh A, et al. Non-Valvular Cardiac Aspergilloma: A Rare Presentation of a Rare Condition. Heart Lung Circ. 2019 Jul;28(7):e115-e116. doi: 10.1016/j.hlc.2019.02.002. Epub 2019 Feb 15.
5. Lim ML, Oliver DH, Barasch E. Aspergillus Mural Vegetation Identified by Transesophageal Echocardiography. Echocardiography. 1997 May;14(3):283-286.
6. Pavlina AA, Peacock JW, Ranginwala SA, et al. Aspergillus mural endocarditis presenting with multiple cerebral abscesses. J Cardiothorac Surg. 2018 Oct 16;13(1):107. doi: 10.1186/s13019-018-0796-4.
7. Shoar MG, Zomorodian K, Saadat F, Hashemi MJ, Tarazoei B. Fatal endocarditis due to Aspergillus flavus in Iran. J Pak Med Assoc. 2004 Sep;54(9):485-6.
8. Vianna R, Misra V, Fridell JA, et al. Survival after disseminated invasive aspergillosis in a multivisceral transplant recipient. Transplant Proc. 2007 Jan-Feb;39(1):305-7.
9. Baumann S, Renker M, Schoepf UJ, et al. Invasive cardiac aspergillosis with postinfectious left ventricular aneurysm in a patient with acute myeloid leukemia. Can J Cardiol. 2014 Nov;30(11):1463.e1-2. doi: 10.1016/j.cjca.2014.06.017. Epub 2014 Jun 30.

10. Bullis SS, Krywanczyk A, Hale AJ. Aspergillosis myocarditis in the immunocompromised host. *IDCases*. 2019 May 31;17:e00567. doi: 10.1016/j.idcr.2019.e00567. eCollection 2019.
11. Carrascosa Porras M, Herreras Martínez R, Corral Mones J, et al. Fatal Aspergillus myocarditis following short-term corticosteroid therapy for chronic obstructive pulmonary disease. *Scand J Infect Dis*. 2002;34(3):224-7.
12. Hori MK, Knight LL, Carvalho PG, Stevens DL. Aspergillar myocarditis and acute coronary artery occlusion in an immunocompromised patient. *West J Med*. 1991 Nov;155(5):525-7.
13. Ohya I, Bunai Y, Tsujinaka M, Akaza K, Nakamura I. Fatal Aspergillus pancarditis after incompatible blood transfusion intended to be an autologous blood transfusion. *Leg Med (Tokyo)*. 2001 Dec;3(4):246-51.
14. Pierre M, Hough AJ, Talley JD. IT FITS! Intelligence Transfer: From Images to Solutions Myocardial Aspergillosis. *Journal of Interventional Cardiology*. 1998, 11: 247-248. doi:10.1111/j.1540-8183.1998.tb00125.x
15. Rogers JG¹, Windle JR, McManus BM, Easley AR Jr. Aspergillus myocarditis presenting as myocardial infarction with complete heart block. *Am Heart J*. 1990 Aug;120(2):430-2.
16. Romagnuolo J, Jewell LD, Kneteman NM, Bain VG. Graft-versus-host disease after liver transplantation complicated by systemic aspergillosis with pancarditis. *Can J Gastroenterol*. 2000 Jul-Aug;14(7):637-40.
17. Rouby Y, Combourieu E, Perrier-Gros-Claude JD, Saccharin C, Huerre M. A case of Aspergillus myocarditis associated with septic shock. *J Infect*. 1998 Nov;37(3):295-7.
18. Sergi C, Weitz J, Hofmann WJ, et al. Aspergillus endocarditis, myocarditis and pericarditis complicating necrotizing fasciitis. Case report and subject review. *Virchows Arch*. 1996 Oct;429(2-3):177-80.

19. Siu YP, Leung KT, Tong MK, et al. Fatal case of *Aspergillus* coinfection in a renal transplant recipient suffering from cytomegalovirus pneumonitis. *Nephrology* (Carlton). 2005 Dec;10(6):619-22.
20. Sulik-Tyszka B, Kacprzyk P, Mądry K, et al. Aspergillosis of the Heart and Lung and Review of Published Reports on Fungal Endocarditis. *Mycopathologia*. 2016 Aug;181(7-8):583-8. doi: 10.1007/s11046-016-0012-9. Epub 2016 May 31.
21. Walsh TJ, Bulkley BH. *Aspergillus* pericarditis: clinical and pathologic features in the immunocompromised patient. *Cancer*. 1982 Jan 1;49(1):48-54.
22. Williams AH. *Aspergillus* myocarditis. *Am J Clin Pathol*. 1974 Feb;61(2):247-56.
23. Cox JN, di Dió F, Pizzolato GP, Lerch R, Pochon N. *Aspergillus* endocarditis and myocarditis in a patient with the acquired immunodeficiency syndrome (AIDS). A review of the literature. *Virchows Arch A Pathol Anat Histopathol*. 1990;417(3):255-9.
24. Mullen P, Jude C, Borkon M, Porterfield J, Walsh TJ. *Aspergillus* mural endocarditis. Clinical and echocardiographic diagnosis. *Chest*. 1986 Sep;90(3):451-2.
25. Peterson SP, Schiller N, Stricker RB. Failure of two-dimensional echocardiography to detect *aspergillus* endocarditis. *Chest*. 1984 Feb;85(2):291-4.
26. Welsh RA, Buchness JM. *Aspergillus* endocarditis, myocarditis and lung abscesses; report of a case. *Am J Clin Pathol*. 1955 Jul;25(7):782-6.
27. Itoh M, Takahashi M, Mori M, et al. Myocardial infarction caused by *Aspergillus* embolization in a patient with aplastic anemia. *Intern Med*. 2006;45(8):547-50. Epub 2006 May 15.
28. Kupsky DF, Alaswad K, Rabbani BT. A Rare Case of *Aspergillus* Pericarditis with Associated Myocardial Abscess and Echocardiographic Response to Therapy. *Echocardiography*. 2016 Jul;33(7):1085-1088. doi: 10.1111/echo.13214. Epub 2016 Mar 23.

29. Chatterjee D, Bal A, Singhal M, Vijayvergiya R, Das A. Fibrosing mediastinitis due to *Aspergillus* with dominant cardiac involvement: report of two autopsy cases with review of literature. *Cardiovasc Pathol*. 2014 Nov-Dec;23(6):354-7. doi: 10.1016/j.carpath.2014.05.005. Epub 2014 Jun 5.
30. Hayashi A, Kobayashi S, Hisauchi I, et al. Long-Term Favorable Course of *Aspergillus* Endo-, Myo-, and Pericarditis. *Int Heart J*. 2017 Dec 12;58(6):1020-1023. doi: 10.1536/ihj.16-485. Epub 2017 Nov 22.
31. Kaplan R, Duncalf D, Cizmar S. *Aspergillus* pancarditis and cardiac arrest during anesthesia. *Anesth Analg*. 1981 Jun;60(6):440-4.
32. Schwartz DA. *Aspergillus* pancarditis following bone marrow transplantation for chronic myelogenous leukemia. *Chest*. 1989 Jun;95(6):1338-9.
33. Bhat M, Ghali P, Wong P, et al. Immunosuppression with budesonide for liver transplant recipients with severe infections. *Liver Transpl*. 2012 Feb;18(2):262-3. doi: 10.1002/lt.22453.
34. Carrel TP, Schaffner A, Schmid ER, et al. Fatal fungal pericarditis after cardiac surgery and immunosuppression. *J Thorac Cardiovasc Surg*. 1991 Jan;101(1):161-4.
35. Cooper JA, Weinbaum DL, Aldrich TK, Mandell GL. Invasive aspergillosis of the lung and pericardium in a nonimmunocompromised 33 year old man. *Am J Med*. 1981 Nov;71(5):903-7.
36. Kombade SP, Abhishek KA, Nag VL. Fungal Pericarditis due to *Aspergillus nidulans*: A Rare Case Report. *Journal of Clinical and Diagnostic Research*. 2018. 12. DD05-DD06. 10.7860/JCDR/2018/37176.12071.
37. Luce JM, Ostenson RC, Springmeyer SC, Hudson LD. Invasive aspergillosis presenting as pericarditis and cardiac tamponade. *Chest*. 1979 Dec;76(6):703-5.
38. Mortensen KL, Knudsen JB, Jensen-Fangel S, et al. Successful management of invasive aspergillosis presenting as pericarditis in an adult patient with chronic

granulomatous disease. *Mycoses*. 2011 Jul;54(4):e233-6. doi: 10.1111/j.1439-0507.2009.01835.x. Epub 2009 Dec 23.

39. Ross EM, Macher AM, Roberts WC. *Aspergillus fumigatus* thrombi causing total occlusion of both coronary arterial ostia, all four major epicardial coronary arteries and coronary sinus and associated with purulent pericarditis. *Am J Cardiol*. 1985 Sep 1;56(7):499-500.
40. Salanitri GC, Huo E, Miller FH, Gupta A, Pereles FS. MRI of mycotic sinus of valsalva pseudoaneurysm secondary to *Aspergillus* pericarditis. *AJR Am J Roentgenol*. 2005 Mar;184(3 Suppl):S25-7.