

Material for Online Repository  
JACI Submission  
6/2015

**Table 1.** Cases and literature review of HIES patients with endemic fungal infections.

Case [Reference]	Age*/gender/race	STAT3 mutation (domain)	Endemic mycosis	Pulmonary disease	Extra pulmonary disease	Therapy **	Complications
<b>H1</b>	10/M/W	V432M (DNA binding)	<i>Histoplasma</i>	Y	Assumed dissemination to liver and spleen	Liposomal amphotericin, itraconazole, posaconazole	Renal insufficiency from amphotericin
<b>H2</b>	15/F/W	F621V (SH2)	<i>Histoplasma</i>	N	Gastrointestinal	Liposomal amphotericin, itraconazole	Duodenal stricture, renal insufficiency from amphotericin
<b>H3</b>	22/F/W	W479C (DNA binding)	<i>Histoplasma</i>	N	Laryngeal	Ketoconazole	Reconstructive laryngoplasty
<b>H4[E1]</b>	4/F/ND	ND	<i>Histoplasma</i>	N	Rectal	Unknown	ND
<b>H5[E2]</b>	14/F/ND	ND	<i>Histoplasma</i>	N	Ileocecal	Itraconazole (12 mo)	ND
<b>H6[E3]</b>	27/F/B	ND	<i>Histoplasma</i>	N	Cecum, colon, bone marrow	Amphotericin B (ND), ketoconazole (2 mo)	ND
<b>H7 [E4]</b>	16/M/ND	ND	<i>Histoplasma</i>	N	Ileum, cecum, regional lymph nodes	Ketoconazole (6 mo)	Misdiagnosis as Crohn's disease
<b>H8[E5]</b>	2/M/ND	K591M (SH2)	<i>Histoplasma</i>	Y	Disseminated	ND	Respiratory distress; hypoxia
<b>H9[E6]</b>	33 and 37/M/W	ND	<i>Histoplasma and Cryptococcus</i>	Age 33: <i>Histoplasma</i>	Age 33: Tongue ( <i>Histoplasma</i> )	Ketoconazole (ND); <i>Histoplasma</i> ; amphotericin B (ND)	Lobectomy for <i>Histoplasma</i> -related

						Age 37: Meningitis ( <i>Cryptococcus</i> )	fluconazole (ND; <i>Cryptococcus</i> )	bronchiectasis
<b>Cr1</b>	18/M/A	R423Q (DNA binding)	<i>Cryptococcus</i> <i>gattii</i>	<i>Cryptococc</i> <i>us gattii</i>	<i>Cryptococcus</i> <i>gattii</i> meningitis	Liposomal amphotericin B, flucytosine, voriconazole	Papilledema and increased opening pressures without vision changes	
<b>Cr2[E7]</b>	29/F/B	ND	<i>Cryptococcus</i> <i>neoformans</i>	N	Colon, perirectal abscess	Amphotericin B (10 wk) and 5- flucytosine (ND)	ND	
<b>Cr3[E8]</b>	31/M/W	ND	<i>Cryptococcus</i> <i>neoformans</i>	N	Esophageal	Amphotericin B (6 wk) and 5- flucytosine (6 wk)	ND	
<b>Cr4[E9]</b>	13/M/ND	ND	<i>Cryptococcus</i> <i>neoformans</i>	N	Meningitis	Amphotericin B (10 wk), 5-flucytosine (6 wk), dexamethasone (12 wk), fluconazole (6 mo)	Myeloperitoneal shunt	
<b>Co1</b>	4/F/W	V713M (Trans- activation)	<i>Coccidioides</i> <i>immitis</i>	Y	Meningitis	Liposomal amphotericin, fluconazole	Stroke, hydrocephalus, bilateral VP-shunt hypercalcemia	
<b>Co2[E10]</b>	17/F/ND	T412S (DNA binding)	<i>Coccidioides</i> <i>immitis</i>	Y	Meningitis, cerebral abscess	Amphotericin B (3 wk), fluconazole (lifelong)	Altered mental status requiring temporary intubation	
<b>Co3 [E11]</b>	4/F/ND	ND	<i>Coccidioides</i> <i>immitis</i>	N	Meningitis	Amphotericin B (ND), fluconazole (ND)	Strokes	

\* Age is reported in years

\*\* Remains on secondary prophylaxis, unless stated otherwise

A: Asian, B: Black, ND: Not Documented, W: White

[E] references can be found in the Online Repository.

## References of Literature Review Patients

- E1. Rana C, Krishnani N, Kumari N, Shastri C, Poddar U. Rectal histoplasmosis in Job's syndrome. Indian J. Gastroenterol. Off. J. Indian Soc. Gastroenterol. **2013**; 32:64–65.
- E2. Steiner SJ, Kleiman MB, Corkins MR, Christenson JC, Wheat LJ. Ileocecal histoplasmosis simulating Crohn disease in a patient with hyperimmunoglobulin E syndrome. Pediatr. Infect. Dis. J. **2009**; 28:744–746.
- E3. Cappell MS, Manzione NC. Recurrent colonic histoplasmosis after standard therapy with amphotericin B in a patient with Job's syndrome. Am. J. Gastroenterol. **1991**; 86:119–120.
- E4. Alberti-Flor JJ, Granda A. Ileocecal histoplasmosis mimicking Crohn's disease in a patient with Job's syndrome. Digestion **1986**; 33:176–180.
- E5. Robinson WS, Arnold SR, Michael CF, et al. Case report of a young child with disseminated histoplasmosis and review of hyper immunoglobulin e syndrome (HIES). Clin. Mol. Allergy **2011**; 9:14.
- E6. Desai K, Huston DP, Harriman GR. Previously undiagnosed hyper-IgE syndrome in an adult with multiple systemic fungal infections. J. Allergy Clin. Immunol. **1996**; 98:1123–1124.
- E7. Hutto JO, Bryan CS, Greene FL, White CJ, Gallin JI. Cryptococciosis of the colon resembling Crohn's disease in a patient with the hyperimmunoglobulinemia E-recurrent infection (Job's) syndrome. Gastroenterology **1988**; 94:808–812.
- E8. Jacobs DH, Macher AM, Handler R, Bennett JE, Collen MJ, Gallin JI. Esophageal cryptococciosis in a patient with the hyperimmunoglobulin E-recurrent infection (Job's) syndrome. Gastroenterology **1984**; 87:201–203.
- E9. Garty BZ, Wolach B, Ashkenazi S, Weismart Y, Rachmel A, Nitzan M. Cryptococcal meningitis in a child with hyperimmunoglobulin E syndrome. Pediatr Allergy Immunol Off Publ Eur Soc Pediatr Allergy Immunol **1995**; 6:175–7.
- E10. Powers AE, Bender JM, Kumánovics A, et al. Coccidioides immitis meningitis in a patient with hyperimmunoglobulin E syndrome due to a novel mutation in signal transducer and activator of transcription. Pediatr. Infect. Dis. J. **2009**; 28:664–666.
- E11. Stanga SD, Dajud MV. Visual changes in a 4-year-old. Clin Pediatr (Phila) **2008**;47:959–61.
- E12. Vinh DC, Masannat F, Dzioba RB, Galgiani JN, Holland SM. Refractory disseminated coccidioidomycosis and mycobacteriosis in interferon-gamma receptor 1 deficiency. Clin. Infect. Dis. Off. Publ. Infect. Dis. Soc. Am. **2009**; 49:e62–65.
- E13. Vinh DC, Schwartz B, Hsu AP, et al. Interleukin-12 receptor  $\beta$ 1 deficiency predisposing to disseminated Coccidioidomycosis. Clin. Infect. Dis. Off. Publ. Infect. Dis. Soc. Am. **2011**; 52:e99–e102.
- E14. Sampaio EP, Hsu AP, Pechacek J, et al. Signal transducer and activator of transcription 1 (STAT1) gain-of-function mutations and disseminated coccidioidomycosis and histoplasmosis. J. Allergy Clin. Immunol. **2013**; 131:1624–1634.