International Journal of Women's Dermatology 1 (2015) 31–36

Contents lists available at ScienceDirect

International Journal of Women's Dermatology

Dermatologic conditions in internationally adopted children ☆

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ARTICLE INFO

Article history:
Received 26 October 2014
Received in revised form 1 December 2014
Accepted 13 December 2014

Keywords:
Health care delivery
Skin signs of systemic disease
Infection-bacterial
Infection-fungal
Insect bite/bite reactions
Pediatric dermatology

ABSTRACT

Over 200,000 children have been adopted into United States (US) families from abroad since the year 2000. Health care providers who care for children adopted internationally should be aware of the spectrum of illnesses seen in this population, and should be prepared to encounter potentially unusual situations. An appreciation for the unique pre-adoption exposures and vulnerabilities inherent in international adoption is critical for proper diagnosis and treatment of this heterogeneous group of children. It is important to consider the impact of potential early childhood stressors such as nutritional, sensory, and emotional deprivation, trauma and abuse, as well as prenatal exposures to drugs, alcohol, and infectious diseases. Providers must also take into account international variation in health care practices, including immunization, treatment, surgical, and hygiene standards. The differential diagnosis for cutaneous eruptions in children adopted internationally is broad and must encompass endemic systemic illnesses with skin manifestations, such as measles, tuberculosis, leprosy, and congenital syphilis, and primary dermatologic diseases such as scabies and bacterial and fungal infections. The importance of maintaining a broad differential and open mind when addressing the dermatologic needs of these children cannot be overemphasized.

Introduction

Over 200,000 children have been adopted into United States (US) families from abroad since the year 2000. International adoptions peaked at nearly 23,000 per year in 2004–2005 and, for a variety of reasons, have steadily declined to approximately 7,000 in 2013 (Intercountry Adoption: Bureau of Consular Affairs, US Department of State). Most children have been adopted from China, Ethiopia, Russia, South Korea, Guatemala and Ukraine (Intercountry Adoption: Bureau of Consular Affairs, US Department of State). There has been a significant increase in the adoption of children with special physical, psychological, or educational needs (Hansen, 2006).

Internationally adopted children are a heterogeneous population, exposed to a broad range of living conditions (Sperling, 2001) and infectious diseases in their birth countries (Staat and Klepser, 2006) (Table 1). Health care systems and documentation vary tremendously by region (Staat and Klepser, 2006). Before leaving their home countries, adoptees undergo basic mandatory screening for specific infectious diseases and serious handicaps that may affect acquisition of a permanent residency visa (Committee on Infectious Diseases, American Academy of Pediatrics, 2009). In addition, the American Academy of Pediatrics recommends that all international adoptees be screened for hepatitis B, syphilis, HIV, tuberculosis, and stool ova and parasites, and receive a complete blood count with red blood cell indices. Additional testing may be warranted depending on potential exposure history and results of initial screening tests (Committee on Infectious Diseases, American Academy of Pediatrics, 2009).

Acutely, children present most often with infection, including intestinal parasites and skin and soft tissue infections (SSTI) (Committee on Infectious Diseases, American Academy of Pediatrics, 2009). Common illnesses may present atypically in international adoptees due to factors such as malnutrition, immune dysregulation, and prior incomplete or ineffective treatment. Inadequately treated conditions may present with unusual complications. Providers should maintain a broad differential diagnosis to include the possibility of endemic, vaccine-preventable, or hospital acquired infections.

Special Considerations

Early childhood stressors such as sensory and emotional deprivation have been implicated in immune, endocrine and developmental abnormalities. Developmental and growth delays are common among children adopted internationally, especially those who were in foster care or orphanages prior to adoption (Miller and Hendrie, 2000; Miller et al., 2008). Orphanage living, in particular, has been linked to health and developmental problems, as well as nutritional deprivation (Mason and Narad, 2005). The ratio of children to orphanage caregivers can be as high as 60:1, thus, deprivation of basic affection is another concern (Mason and Narad, 2005). Overcrowding in the setting of a high pathogen burden can lead to poor hygiene (Gunnar et al., 2001).

☆ Authors have no conflicts of interest to disclose.
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http://dx.doi.org/10.1016/j.ijwd.2014.12.003

Table 1
Reported Conditions by Country/Region.

Conditions by country	Anomalies	Parasites	Rickets	+PPD	SSTI	Viral Exanthem	Scars	Syphilis	HIV
China N = 452 (Miller and Hendrie, 2000) (10-J)	Ear pits (2), giant nevus (1), giant hemangioma (1), cleft (1) (Miller and Hendrie, 2000)	Toxoplasmosis (1), scabies (1) (Miller and Hendrie, 2000) (4) (Murray et al., 2005) Acropustulosis (2) (Tong et al., 2011)	Anecdotal reports of rickets in nearly every child (Rickets in Chinese Children, 2003)	1 case Lupus vulgaris from BCG vaccine (Thakur and Verma, 2011) *TB is endemic	6 (1 more with thrush) (Miller and Hendrie, 2000)	Measles (10) (Centers for Disease Control and Prevention (CDC), 2002), (9) (Centers for Disease Control and Prevention (CDC), 2007), Mumps (1) (Miller and Hendrie, 2000)[7]	Amputated finger from "rat bite" (Miller and Hendrie, 2000)	1 (Miller and Hendrie, 2000)	0[7]
Ethiopia N = 50 (Miller et al., 2008)	Anal fissures (3), ear pits (1), crumpled pinnae(1) (Miller et al., 2008) Dermal hypermelanosis (anecdotal) (Dinkins and Aronson, nd)	(32) trichuris trichiura (6), Hymenolepsis nana (3), Ascaris lumbricoides (2), hookworm (1), shistosoma mansoni (1) Dientamoeba fragilis (1) (Miller et al., 2008) Acropustulosis (1) (Tong et al., 2011)	No Data	8 (Miller et al., 2008) (36 had BCG) (Miller et al., 2008) *TB is endemic	23 (Miller et al., 2008)	Molluscum contagiosum anecdotally reported (Dinkins and Aronson, nd)	Female circumcision (26) (Miller et al., 2008)		0 (reports of positive parents) (Miller et al., 2008)
Russia N = 93 (Miller et al., 2005) (in Russian orphanages) N = 56 (in Soviet Union/Eastern Europe (Albers et al., 1997)	Fetal Alcohol Syndrome 19 (10%) (Miller et al., 2005)	Scabies (5) (Murray et al., 2005) Intestinal (51) (Albers et al., 1997)	41 (21%) (Miller et al., 2005)	5 (Albers et al., 1997) *TB is endemic	No Data	No Data	No Data	1 (Murray et al., 2005) history of congenital syphilis listed on pre-adoptive reviews in 15–20% (Albers et al., 1997)	0 (Albers et al., 1997)
South Korea *no data on adoption, numbers based on 2–3 years of in country reports (0–9 yrs old) (Lee and Allen, 2008)	No Data	"rarely infected" (Miller, 2005)	No Data	#2; 322 (2 yrs of data only) (Lee and Allen, 2008) *TB is endemic	No Data	#1; Measles (43) Mumps (2,050) Varicella (11,107; 2yrs of data only) (Lee and Allen, 2008)	No Data	0	No Data
Guatemala N = 103 (Miller et al., 2005)	CALM (20), ear pits (7), hemangioma (1) (Miller et al., 2005) 19 (18%) "features suggestive of prenatal alcohol exposure" (most "smooth philtrum") (Miller et al., 2005)	Head lice (3), scabies (3) (Miller et al., 2005) Acropustulosis (1) (Tong et al., 2011)	1 (Miller et al., 2005)	7 (7%) (Miller et al., 2005) (57 BCG) (Miller et al., 2005 *TB is endemic	Yeast dermatitis (1) (Miller et al., 2005)	Roseola (1) (Miller et al., 2005)	Child abuse 1 (Miller et al., 2005)	1 (Murray et al., 2005)	0 (1 had mother who was positive) (Miller et al., 2005)

Given the sparse data published on the actual incidence of dermatologic diseases in internationally adopted children to the US, the data were gathered from a few choice reviews and a literature search for other specific documented cases. Full reviews were not available for South Korea and Russia.
A review of documented medical conditions in Russian orphanages and cases from a broader geographic area of Eastern Europe were included.
South Korea is unique in that pre-adoption living conditions are more favorable. A review on the prevalence of certain conditions in South Korea was used to find the most common conditions seen in this country.
It is the opinion of the authors, based on experience and anecdotal reports, that the incidence of many of these diseases is much higher than the literature reports would suggest. Improved disease reporting would lead to a better understanding of the conditions affecting this unique population.