Report from ILCA 2008 Becky Krumwiede

Candida Albicans: Is it Really in the Breast? Thomas Hale, PhD

Tom's description verbatim from the conference syllabus:
For many years it has been the presumption that sore and inflamed nipples in breastfeeding mothers were due to infection with the fungal organism, *Candida Albicans*. The presence of sore, shiny, painful nipples, with pain radiating into the axilla required the coining of the term "candida mastitis," even though most studies did not actually find culturable candida present in milk.

This lack of evidence for infection was presumed due to the presence of inhibitory growth factors in milk such as lactoferrin, lysozyme, or secretory IgA. It was assumed that we were unable to grow *Candida Albicans* from milk or from the breasts of mothers due to the fact that the fungus was destroyed, or its growth inhibited by agents present in human milk. Other studies found that iron was required to support the growth of *Candida* in in vitro cultures. Earlier studies using extracted lactoferrin, suggested that lactoferrin strongly inhibited the growth of candida. Unfortunately, numerous other studies in infectious disease journals clearly suggested that humans are not normally infected, systemically, with *Candida* unless they are immunocompromised. This has been the standard model for describing fungal infections in humans for many decades. So how can *Candida* be expected to grow and develop within the ductal system of the human breast?

Because we presumed that we could not culture or grow *Candida* from human milk, studies of ductal *Candida* infections in breastfeeding mothers have been limited. It now appears that this original data is inaccurate. *Candida albicans* is a normal fungal organism found on virtually all human skin, and in the oral cavity for virtually all infants. Studies have found that as many as 80-90% of infants have culturable *Candida* present in their mouths. Many of the original studies of nipple *Candida* did not actually clean the mothers nipple (clean catch), and thus the source of the *Candida* may have actually been the saliva from the infants mouth, and not growth on the mothers nipple.

Studies in our laboratories have found new evidence that *Candida* grows well in human milk, and is easily culturable.

Becky's Notes:
Hale's team studied this by looking for Beta Glucan in human milk. Beta (1,3) Glucan is a by-product of Candida Albicans. If B-Glucan is found, then Candida is present. They studied mothers who were symptomatic for yeast and cultured the milk on media that will only grow fungus.

The study showed that

- Fresh human milk does not kill Candida.
- Freezing does not kill Candida.
- Candida will grow in milk just fine when it's incubated, so if the milk of the symptomatic mothers had Candida in it, they should have been able to grow it.

- Of their study samples, only 1/29 grew Candida, and the mother later had MRSA mastitis in that breast.
- Iron stimulates the growth of Candida by a **lot.**
- Even when they added iron to the milk of symptomatic moms, none grew Candida except for the one later found to have MRSA.

They concluded that since Candida grows just fine in milk but could not be grown from the samples from symptomatic mothers, there is no such thing as "ductal Candida."

The study still has not been published but will be coming out soon in ***Breastfeeding Medicine***, possibly in the June 2009 issue. Watch for it!

Breastfeeding-Associated Hyperbilirubinemia: Are We Missing an Inadequate Milk Intake By the Infant? Zlata Felc, MD, ScD, IBCLC

A Baby-Friendly Hospital in Slovenia conducted a retrospective study over a 2-year period to identify otherwise healthy, term, exclusively breastfed newborns (<5 days of age) with intensified physiologic jaundice. Babies under 36 weeks, those with underlying causes of hyperbilirubinema, mothers with primary insufficient milk syndrome, and babies delivered by c-section were excluded. They looked at over 3000 babies to assess the incidence of hyperbilirubinemia caused by inadequate milk intake. (Poor breastmilk intake → delay in stooling → bilirubin in meconium being reabsorbed.)

This is a hospital with no forceps deliveries, 2.5% mityvac rate, 15% c-section rate and almost no inductions. They found an incidence of breastfeeding-associated hyperbilirubinemia of 5.1% on the 2nd to 4th day of life (median 14.5 mg/dL, range 13 to 19.75 dL). An inadequate milk intake (based on weight loss) occurred in 25.8% of the jaundiced babies vs. 12.9% of the non-jaundiced babies.

The study concluded that "an inadequate milk intake is common among otherwise healthy exclusively breastfed infants with hyperbilirubinemia during the first four days of life." Even under ideal conditions (Baby Friendly Hospitals) we need to be vigilant to make sure babies are feeding frequently and stooling appropriately.

Video Clips Shown:

- Autism screening study – www.forockids.org

- Biological Nurturing – Laid-back Breastfeeding, Dr. Suzanne Colson
  Available from www.geddesproduction.com, cost $98