

Fluconazole (Diflucan)

Fluconazole (Diflucan) is a synthetic antifungal agent which can be used for the treatment of a variety of *Candida albicans* infections. For the breastfeeding mother in particular, it can be used to treat recurrent *Candida* infections of the nipples, and, if such a thing exists, *Candida* infections of the milk ducts.

Candida (yeast) infections of the nipple and ducts

Candida infections of the nipples may occur any time while the mother is breastfeeding. *Candida albicans* likes warm, moist, dark areas. It lives normally on us, and 90% of babies are colonised by it within a few hours of birth. It only becomes a problem under certain circumstances.

Candida infections of the skin or mucous membranes are more likely to occur when there is a breakdown in the integrity of the skin or mucous membrane--another reason why a good latch is very important from the very first day. Many *Candida* infections would, perhaps, not have occurred, if the mother had not had sore nipples and a breakdown of the skin of the nipples and areola. The oozing of serum which occurs often in cracked nipples turns *Candida albicans* from its harmless form to a disease causing form.

The widespread use of antibiotics also encourages the overgrowth of *Candida albicans*. Many pregnant women, women in labour, and new mothers, as well as their babies receive antibiotics, sometimes with very little justification.

Diagnosis of Candida infections of the nipples and/or ducts

There is no good test which helps make the diagnosis. A positive culture from the nipple(s) proves little. Neither does a negative culture. The best way to make a diagnosis is by history.

The presence or absence of a *Candida* infection in the baby is not helpful. A baby may have thrush all over his mouth, but the mother have no pain. A mother may have the classic symptoms of a *Candida* infection of the nipples, and the baby have no thrush or diaper rash.

The typical symptoms of a Candida infection of the nipples are:

- Nipple pain which begins after a period of pain free nursing. Though there are a few other causes of nipple pain which begin later, *Candida* infection is definitely the most common. The nipple pain of *Candida* may begin without an interval of pain free nursing, however.
- Burning nipple pain which continues throughout the feeding, sometimes continuing after the feeding is over.
- Pain in the breast which is "shooting" and which goes through to the mother's back and shoulder. This pain is usually worse toward the end of the feeding, and worsens still more after the feeding is over. It also tends to be much worse at night. This pain may occur without any nipple pain.
- Pain, as above, which is made much better with the use of gentian violet.

Treating Candida Infections

Our first approach to treating these infections is gentian violet (handout #6 Using Gentian Violet). It is safe, works rapidly, and almost always, though there seems to have been a decrease in its effectiveness over the past few years. A good response to gentian violet confirms that the mother's nipple pain is caused by *Candida* since little else will respond to gentian violet. It thus also justifies the use of fluconazole, if needed.

Fluconazole

Fluconazole is an antifungal agent which is taken systemically (taken by mouth or intravenously). It is fungistatic, which means that it stops fungi (such as *Candida albicans*) from multiplying, but does not actually kill them. This accounts for the fact that sometimes it takes several days to have an effect.

Side Effects

Fluconazole is generally well tolerated, but there is no such thing as a drug which never has side effects. Concern about liver injury is exaggerated, since this complication seems quite rare, and usually occurs in people who are taking other medications as well, and who have taken fluconazole for months or longer, and who have immune deficiencies. But it is a possibility that needs to be kept in mind.

Vomiting, diarrhea, abdominal pain and skin rashes are the most common side effects. These are not usually severe, and only occasionally is it necessary to stop the medication because of these side effects. Allergic reactions are possible but uncommon. Call immediately if you have any concerns.

Fluconazole in the milk

Fluconazole does appear in the milk, and this is as it should be, since the idea is to treat infection in the ducts and nipples. It is thus superior to ketoconazole, which gets into the milk in only tiny amounts. The baby will obviously get some, but this drug is now being promoted for use in babies for the treatment of simple thrush. There have been no complications in the baby reported from exposure to fluconazole in the breastmilk. Continue breastfeeding while taking fluconazole, though you may be told you cannot.

Dose of fluconazole

Candida albicans is learning to become resistant to fluconazole, and the dose we use has increased over the past few years. Only a few years ago, 100 mg daily for 10 days cured 90% of women of their symptoms. We have now found this to be inadequate.

Your prescription will be for fluconazole 200 mg as a first dose, followed by 100 mg twice daily for at least two weeks. We like the mother to be symptom free for at least a week before stopping the medication. This seems, on the basis of our experience, a fairly good guarantee against relapse. However, this means that although most mothers require only the usual two weeks, some need longer treatment. Occasionally it may take up to a week for the pain to even start going away. Call if there is no relief in seven days.

It is sometimes useful to treat the baby as well. The dose for the baby would be 6 mg/kg as a first dose, followed by 3 mg/kg/day as one dose for the same period of time as the mother.

Note: The mother's 2 week prescription is likely to cost between \$300 and \$350.

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