

# Louth: Antimicrobial Guidelines - Louth Hospitals: Antimicrobial Guidelines: Neonatal - ■Fluconazole IV and PO

## Neonatal - Fluconazole IV and PO

Triazole antifungal [1].

### MEDICATION SAFETY ISSUES

- Fluconazole may be confused with other azole antifungals [2]

### USES

- Treatment of susceptible invasive candidal infections and cryptococcal infections [1].
- Prophylaxis of fungal infections in infants <1kg with risk factors for invasive candida such as broad spectrum antimicrobials and NEC. Prophylaxis considered on a case by case basis in patients >1kg with risk factors. **Under Consultant direction** [3,4].

### PRESENTATION

**Intravenous** : Solution for infusion 2mg/ml [5]. Each 200mg bottle contains 15mmol of sodium [1,5].

**Oral**: Powder for oral suspension.

### TREATMENT DOSAGE [1,5]

Age	Dose	Frequency	Duration
Neonate under 14 days	6 – 12 mg/kg	Every 72 hours	Continue according to response (at
Neonate 14 – 28 days	6 – 12 mg/kg	Every 48 hours	least 8 weeks for cryptococcal
Child 1 – 3 months	6 – 12 mg/kg	Every 24 hours	infections)

**PROPHYLACTIC DOSAGE**: 3mg/kg/dose every 72 hours for 6 weeks by oral or intravenous administration [3,4]

**Renal Impairment** : Dose reduction may be required – refer to BNFC and seek advice [1].

### RECONSTITUTION

**Intravenous**: Fluconazole solution for infusion is already in liquid form, further dilution is not necessary [1,5].

**Oral**: For reconstitution of the oral suspension follow the instructions on the pack.

### ADMINISTRATION

Fluconazole may be administered either orally or by intravenous infusion, the route being dependent on the clinical state of the patient. On transferring from the intravenous to the oral route, or *vice versa*, there is no need to change the dose [1].

**Oral**: Shake the bottle before use. Administer using an oral/enteral syringe.

**Intravenous**: Administer by IV infusion over 30 minutes; do not exceed an infusion rate of 5 – 10 ml/min.[1]

### SAMPLE CALCULATION FOR TREATMENT

3.2 kg neonate 9 days old with susceptible candida infection. Dose: 12mg/kg = 38.4mg every 72 hours.

Fluconazole 2mg/ml solution = 38.4mg in 19.2ml. Withdraw 19.2ml and give by IV infusion over 30 min.

### SAMPLE CALCULATION FOR PROPHYLAXIS

5 day old, 0.8 kg extremely preterm infant born at 26 weeks gestational age on parenteral nutrition and broad-spectrum antibiotics. Dose (as advised by Consultant): 3 mg/kg = 2.4 mg every 72 hours.

Fluconazole 2mg/ml solution = 2.4 mg in 1.2 ml. Withdraw 1.2 ml and give by IV infusion over 30 min.

### STORAGE

**Intravenous:** Once opened, use immediately. Any unused infusion should be discarded.[5]

**Oral:** The shelf life of the reconstituted suspension is 28 days. Store below 30°C, do not freeze [6].

**MONITORING** [4]

- Fluconazole may interact with Erythromycin, Ibuprofen, **Midazolam** , Phenytoin, Zidovudine. This list is not complete. Always check for drug interactions.
- Monitor patient for rash – discontinue fluconazole if bullous lesions or erythema multiforme develop.
- Monitor renal function – dose reduction may be required in renal impairment.
- Monitor liver function – risk of hepatic toxicity.

**ADVERSE EFFECTS**

The most frequently (>1/10) reported adverse reactions are headache, abdominal pain, diarrhoea, nausea, vomiting, ALT increased, AST increased, ALP increased and rash [5]. Less frequently dyspepsia, taste disturbance, hepatic disorders, angioedema, anaphylaxis, dizziness, seizures, alopecia, pruritus, toxic epidermal necrolysis, Stevens-Johnson syndrome, hyperlipidaemia, leucopenia, thrombocytopenia, and hypokalaemia [1].

**REFERENCES**

1. British Medical Association, Royal Pharmaceutical Society of Great Britain, Royal College of Paediatrics and Child Health, et al. BNF for Children. London: BMJ Group, Pharmaceutical Press and RCPCH Publications Limited; 2020. Available from [www.medicinescomplete.com](http://www.medicinescomplete.com) , accessed 23/11/2020.
2. UpToDate. Fluconazole Paediatric Drug Information: Lexicomp®. Available from [www.uptodate.com](http://www.uptodate.com) , accessed 08/12/14.
3. Hope, W.W., et al., *ESCMID\* guideline for the diagnosis and management of Candida diseases 2012: prevention and management of invasive infections in neonates and children caused by Candida spp.* Clin Microbiol Infect, 2012. **18 Suppl 7** : p. 38-52.
4. [Pappas, P.G., et al., Executive Summary: Clinical Practice Guideline for the Management of Candidiasis: 2016 Update by the Infectious Diseases Society of America. Clinical Infectious Diseases, 2016. 62 \(4\): p. 409-417.](#)
5. B.Braun. Summary of Product Characteristics for Fluconazole 2mg/mL Solution for Infusion. 2017. Available from [www.hpra.ie](http://www.hpra.ie) , accessed 23/11/2020.
6. Pfizer. Patient Information Leaflet for Diflucan® powder for oral suspension. 2020. Available from [www.hpra.ie](http://www.hpra.ie) , accessed 23/11/2020.

**Summary of Changes from Previous Versions**

Date	Change
Feb 2021: Rev. No. 1	Updated based on Rotunda Fluconazole Monograph May 2018. Changes to OLOL monograph: <ul style="list-style-type: none"><li>• Medication Safety Issues: Removed that Diflucan is similar to Diprivan as not relevant in clinical practice, removed that anaphylaxis has been reported rarely as this is already included in adverse effects section.</li><li>• Uses: Greater detail on indications for fluconazole prophylaxis added as per Rotunda and references. Remains under direction of Consultant.</li><li>• Inclusion of ORAL fluconazole as per Rotunda monograph in presentation, dose, reconstitution, administration and storage sections.</li><li>• Dosage: Prophylaxis dose changed as per Rotunda and references.</li><li>• Administration: Addition that fluconazole may be given orally or IV, depending on the clinical status of the patient as per Rotunda.</li><li>• References updated.</li></ul>
May 2015	This is the first version of this guideline.