

## **1.0 Name of the Medicinal Product**

FLUCILLIN 500

## **2.0 Qualitative and Quantitative Composition**

Each hard gelatin capsule contains:

Flucloxacillin Sodium BP Eq. to Flucloxacillin.....500 mg

Excipients q.s.

## **3.0 Pharmaceutical Form**

Black color cap & orange body size "0" each hard gelatin capsule shell filled with white powder.

## **4.0 Clinical Particulars**

### **4.1 Therapeutic indications**

Flucloxacillin Sodium is indicated for the treatment of infections due to sensitive Gram-positive organisms, including  $\beta$ -lactamase producing staphylococci and streptococci.

Typical indications include:

Skin and soft tissue infections:

Boils, cellulitis, infected burns, abscesses, infected skin conditions (e.g. ulcer, eczema, and acne), protection for skin grafts, carbuncles, furunculosis, infected wounds and impetigo

Respiratory tract infections:

Pneumonia, lung abscess, empyema, sinusitis, pharyngitis, otitis media and externa, tonsillitis and quinsy.

Other infections caused by flucloxacillin-sensitive organisms:

Osteomyelitis, urinary tract infection, enteritis, meningitis, endocarditis and septicaemia Flucloxacillin Sodium is also indicated for use as a prophylactic agent during major surgical procedures when appropriate; for example, cardiothoracic and orthopaedic surgery.

### **4.2 Posology and method of administration**

Posology

Depends on the age, weight and renal function of the patient, as well as on the severity of the infection.

Adults

Usual adult dosage (Including elderly patients)

Oral – 250mg four times a day

Osteomyelitis, endocarditis – Up to 8g daily, in divided doses six to eight hourly

Surgical prophylaxis – 1 to 2g IV at induction of anaesthesia followed by 500mg six hourly IV, IM or orally for up to 72 hours.

Special populations

Geriatric patients

No dose adjustment is considered necessary.

Dose in elderly patients

Data given in above section

Renal and hepatic impairment

Renal impairment

Abnormal renal function: In common with other penicillins, flucloxacillin usage in patients with renal impairment does not usually require dosage reduction. However, in the presence of severe renal failure (creatinine clearance <10ml/min) a reduction in dose or an extension of dose interval should be considered. Flucloxacillin is not significantly removed by dialysis and hence no supplementary dosages need to be administered either during, or at the end of the dialysis period.

Hepatic impairment

No dose adjustment is considered necessary.

Pediatric population

Usual children's dosage

2-10 years: half adult dose. Under 2 years: quarter adult dose.

**Method of administration**

Oral doses should be administered half to one hour before meals.

### **4.3 Contraindications**

Flucloxacillin should not be given to patients with a history of hypersensitivity to  $\beta$ -lactam antibiotics (e.g. penicillins, cephalosporins) or excipients.

Flucloxacillin is contra-indicated in patients with a previous history of flucloxacillin associated jaundice/hepatic dysfunction.

#### **4.4 Special warnings and precautions for use**

Before initiating therapy with flucloxacillin, careful enquiry should be made concerning previous hypersensitivity reactions to  $\beta$ -lactams.

Serious and occasionally fatal hypersensitivity reactions (anaphylaxis) have been reported in patients receiving  $\beta$ -lactam antibiotics. Although anaphylaxis is more frequent following parenteral therapy, it has occurred in patients on oral therapy. These reactions are more likely to occur in individuals with a history of  $\beta$ -lactam hypersensitivity.

Flucloxacillin should be used with caution in patients with evidence of hepatic dysfunction, Patients  $\geq 50$  years and those with serious underlying disease. In these patients, hepatic events may be severe, and in very rare circumstances, deaths have been reported (see section 4.8). During prolonged treatments (e.g. osteomyelitis, endocarditis), regular monitoring of hepatic and renal functions is recommended.

Prolonged use may occasionally result in overgrowth of non-susceptible organisms.

Flucloxacillin capsules contain approximately 51mg sodium per g. This should be included in the daily allowance of patients on sodium restricted diets.

If anaphylaxis occurs flucloxacillin should be discontinued and the appropriate therapy instituted. Serious anaphylactic reactions may require immediate emergency treatment with adrenaline (epinephrine). Ensure adequate airway and ventilation and give 100% oxygen. IV crystalloids, hydrocortisone, antihistamine and nebulised bronchodilators may also be required.

The use of flucloxacillin (like other penicillins) in patients with renal impairment does not usually require dosage reduction. In the presence of severe renal failure (creatinine clearance less than 10ml/min), however, a reduction in dose or an extension of dose interval should be considered because of the risk of neurotoxicity.

#### **4.5 Interaction with other medicinal products and other forms of interaction**

Probenecid decreases the renal tubular secretion of flucloxacillin. Concurrent administration of probenecid delays the renal excretion of flucloxacillin.

In common with other antibiotics, flucloxacillin may affect the gut flora, leading to lower oestrogen reabsorption and reduced efficacy of combined oral contraceptives.

#### **4.6 Pregnancy and lactation**

##### Pregnancy

Animal studies with flucloxacillin have shown no teratogenic effects. The product has been in clinical use since 1970 and the limited number of reported cases of use in human pregnancy have shown no evidence of untoward effects. The decision to administer any drug during pregnancy should be taken with the utmost care. Therefore, flucloxacillin should only be used in pregnancy when the potential benefits outweigh the potential risks associated with treatment.

##### Lactation

Trace quantities of flucloxacillin can be detected in breast milk. The possibility of hypersensitivity reactions must be considered in breast-feeding infants. Therefore, flucloxacillin should only be administered to a breast-feeding mother when the potential benefits outweigh the potential risks associated with the treatment.

##### Fertility

No data are available.

#### **4.7 Effects on ability to drive and use machines**

Adverse effects on the ability to drive or operate machinery have not been observed.

#### **4.8 Undesirable effects**

##### Summary of the safety profile

The following convention has been utilised for the classification of undesirable effects: Very common ( $>1/10$ ), common ( $>1/100$ ,  $<1/10$ ), uncommon ( $>1/1000$ ,  $<1/100$ ), rare ( $>1/10,000$ ,  $<1/1,000$ ), very rare ( $<1/10,000$ ).

Unless otherwise stated, the frequency of the adverse events has been derived from more than 30 years of post-marketing reports.

b. Tabulated summary of adverse reactions

#### Blood and lymphatic system disorders

Very rare: Neutropenia (including agranulocytosis) and thrombocytopenia. These are reversible when treatment is discontinued. Haemolytic anaemia.

#### Immune system disorders

Very rare: Anaphylactic shock (exceptional with oral administration) (see Section 4.4 Special warnings and special precautions for use), angioneurotic oedema.

If any hypersensitivity reaction occurs, the treatment should be discontinued. (See also Skin and subcutaneous tissue disorders).

#### Gastrointestinal disorders

\*Common: Minor gastrointestinal disturbances.

Very rare: Pseudomembranous colitis.

If pseudomembranous colitis develops, flucloxacillin treatment should be discontinued and appropriate therapy, e.g. oral vancomycin should be initiated.

#### Hepato-biliary disorders

Very rare: Hepatitis and cholestatic jaundice. (See Section 4.4 Special Warnings and Special Precautions for Use). Changes in liver function laboratory test results (reversible when treatment is discontinued).

These reactions are related neither to the dose nor to the route of administration. The onset of these effects may be delayed for up to two months post-treatment; in several cases the course of the reactions has been protracted and lasted for some months. Hepatic events may be severe and in very rare circumstances a fatal outcome has been reported. Most reports of deaths have

been in patients  
≥50 years and in patients with serious underlying disease.

#### Skin and subcutaneous tissue disorders

\*Uncommon: Rash, urticaria and purpura.

Very rare: Erythema multiforme, Stevens-Johnson syndrome and toxic epidermal necrolysis.  
(See also Immune system disorders).

#### Musculoskeletal and connective tissue disorders

Very rare: Arthralgia and myalgia sometimes develop more than 48 hours after the start of the treatment.

#### Renal and urinary disorders

Very rare: Interstitial nephritis.

This is reversible when treatment is discontinued.

#### General disorders and administration site conditions

Very rare: Fever sometimes develops more than 48 hours after the start of the treatment.

\*The incidence of these AEs was derived from clinical studies involving a total of approximately 929 adult and paediatric patients taking flucloxacillin.

#### Description of selected adverse reactions

No information available.

Paediatric population No information available.

Other special population No information available.

### **Reporting of suspected adverse reactions**

Healthcare professionals are requested to report any suspected adverse reactions via national Pharmacovigilance Electronic Reporting Systems to the respective national regulatory authorities.

#### **4.9 Overdose**

Gastrointestinal effects such as nausea, vomiting and diarrhoea may be evident and should be treated symptomatically.

Flucloxacillin is not removed from the circulation by haemodialysis.

#### **5.0 Pharmacological Properties**

##### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group and ATC code:

Pharmacotherapeutic group: Beta-Lactamase Resistant Penicillins.

ATC code: J01CF05

Mechanism of action:

Properties: Flucloxacillin is a narrow-spectrum antibiotic of the group of isoxazolyl penicillins; it is not inactivated by staphylococcal  $\beta$ -lactamases.

Activity: Flucloxacillin, by its action on the synthesis of the bacterial wall, exerts a bactericidal effect on streptococci except those of group D (*Enterococcus faecalis*) staphylococci. It is not active against methicillin-resistant staphylococci.

##### **5.2 Pharmacokinetic properties:**

Absorption

Flucloxacillin is stable in acid media and can therefore be administered either by the oral or parenteral route. The peak serum levels of flucloxacillin reached after one hour are as follows.

- After 250mg by the oral route (in fasting subjects): Approximately 8.8mg/l
- After 500mg by the oral route (in fasting subjects): Approximately 14.5mg/l
- After 500mg by the IM route: Approximately 16.5mg/l

The total quantity absorbed by the oral route represents approximately 79% of the quantity administered

Distribution:

Flucloxacillin diffuses well into most tissue. Specifically, active concentrations of flucloxacillin have been recovered in bones: 11.6mg/l (compact bone) and 15.6mg/l (spongy bone), with a mean serum level of 8.9mg/l.

Crossing the meningeal barrier: Flucloxacillin diffuses in only small proportion into the cerebrospinal fluid of subjects whose meninges are not inflamed. Crossing into mothers' milk: flucloxacillin is excreted in small quantities in mothers' milk

Metabolism:

In normal subjects approximately 10% of the flucloxacillin administered is metabolised to penicilloic acid. The elimination half-life of flucloxacillin is in the order of 53 minutes.

Excretion:

Excretion occurs mainly through the kidney. Between 65.5% (oral route) and 76.1% (parenteral route) of the dose administered is recovered in unaltered active form in the urine within 8 hours. A small portion of the dose administered is excreted in the bile. The excretion of flucloxacillin is slowed in cases of renal failure.

Protein binding:

The serum protein-binding rate is 95%.

**5.3 Preclinical safety data:**

No further information of relevance to add.

**6.0 Pharmaceutical Particulars**

**6.1 List of excipients**

Lactose

Colloidal Anhydrous Silica

Purified Talc

Magnesium Stearate

EGH Capsules Size "0" Black/Orange

**6.2 Incompatibilities**

None reported from clinical studies

**6.3 Shelf life**

24 months.

**6.4 Special precautions for storage**

Store below 30°C. Protect from light & moisture.

**6.5 Nature and contents of container**

Black color cap & orange body size “0” each hard gelatin capsule shell filled with white powder.

10 blisters of 10 Capsules each, packed in a primary carton along with the Pack Insert.

**6.6 Special precautions for disposal and other handling No special requirement**

Any unused medicinal product or waste material should be disposed of in accordance with local requirements

**7.0 Marketing Authorization Holder**

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**8.0 Marketing Authorization Number**

3204/R1

**9.0 Date of First Registration/Renewal of the Registration**

29<sup>th</sup> March 2016

**10.0 Date of Revision of the Text**

29<sup>th</sup> March 2016