DOSAGE FORMS AND STRENGTHS

Dosage in Adults for Using Glucagon for Injection Diagnostic Kit and Glucagon for Injection Single-Dose Vial as

5.2 Insulinoma
5.1 Pheochromocytoma

WARNINGS AND PRECAUTIONS

2.2 Dosage to Treat Severe Hypoglycemia

2 DOSAGE AND ADMINISTRATION

FULL PRESCRIBING INFORMATION: CONTENTS*

Warnings and Precautions (5) 09/2019
Dosage and Administration (2) 09/2019

• Glucagon for Injection is for subcutaneous, intramuscular, or intravenous injection. Administer intravenously
intramuscularly.

- The recommended dosage is 0.5 mg (0.5 mL) injected subcutaneously or intramuscularly into the upper
gastrointestinal tract in adult patients (1.2)

arm, thigh, or buttocks, or intravenously.

8.4 Pediatric Use

7.3 Anticholinergic Drugs

7.1 Beta-blockers

7 DRUG INTERACTIONS

5.7 Cardiac Disease

6 ADVERSE REACTIONS

5.6 Hyperglycemia in Patients with Diabetes Mellitus when Used as a Diagnostic Aid

See 17 for PATIENT COUNSELING INFORMATION and FDA-approved patient labeling.

To report SUSPECTED ADVERSE REACTIONS, contact Fresenius Kabi USA, LLC at 1-800-551-7176 or

• Glucagonoma when used as a diagnostic aid (4)

• Known hypersensitivity to glucagon or to any of the excipients (4)

• Pheochromocytoma (4)

Monitor blood glucose when Glucagon for Injection is used as a diagnostic aid in patients receiving

Warfarin:

Lack of Efficacy in Patients with Decreased Hepatic Glycogen:

For Injection in patients with diabetes mellitus may cause hyperglycemia. Monitor diabetic patients for

(5.8)

13 NONCLINICAL TOXICOLOGY

2  DOSAGE AND ADMINISTRATION

FULL PRESCRIBING INFORMATION

6.1 Clinical Studies Experience

6.2 Clinical Pharmacology

6.2.1 Pharmacokinetics

Animal Data

[see Clinical Pharmacology (12.2)]

{see Warnings and

Use as a Diagnostic Aid

451541 0919

Figure 1. Recovery from Insulin Induced Hypoglycemia (mean blood glucose) After Intramuscular

Blood glucose concentration rises within 10 minutes of injection and maximal concentrations are

Treatment of Severe Hypoglycemia

[see \[Warnings and Precautions (5)\]]

Figure 1: Treatment of Severe Hypoglycemia

In a randomized, single-blind clinical study of Glucagon for Injection, 31 healthy subjects received a single dose

The serum potassium may

In patients with insulinoma, administration of glucagon may produce an initial increase in blood

In states of starvation, with adrenal insufficiency or chronic hypoglycemia may not have

Glucagon for Injection is effective in treating hypoglycemia only if sufficient hepatic glycogen is present.

Although uncommon, there is a risk of hyperglycemia in patients with diabetes mellitus treated with glucagon.

Additional adverse reactions have been identified during post-approval use of glucagon. Because these

Miscarriage in clinically recognized pregnancies is 2%-4% and 15%-20%, respectively.

Animal studies have not been performed to evaluate potential reproductive toxicity. It is not known whether glucagon

The effects of glucagon in human milk are not known. In the U.S. general population, the estimated background risk of

Microvascular complications of diabetes mellitus may increase if the hyperglycemia is not corrected promptly and

The safety and efficacy of glucagon have not been established in any pediatric population.

Pregnancy and Nursing

8.5 Carcinogenesis, Mutagenesis, Impairment of Fertility

8.6 Malformations and Other Human Abnormalities

8.7 Nursing Mothers

10 OVERDOSAGE

10.1 Sign or Symptoms of Overdose

12.2  Pharmacodynamics

[see Drug Interactions (7)]

14 CLINICAL PHARMACOLOGY

14.1 Pharmacodynamics

14.2 Pharmacokinetics

14.3 Pharmacology

15 REPRODUCTIVE TOXICITY

15.1 Carcinogenesis, Mutagenesis, Impairment of Fertility

15.2 Teratogenic Effects

15.3 Pregnancy

16.2.1 Pharmacokinetics

16.2.2 Pharmacodynamics

17 PATIENT COUNSELING INFORMATION

17.2 When Using as a Diagnostic Aid

17.3 When Using as an Antidote

17.4 When Using as a Treatment of Severe Hypoglycemia

17.5 when as a Treatment of Severe Hypoglycemia

17.6 When Using as an Antidote

17.7 When Using as a Diagnostic Aid

18.1 Clinical Studies Experience

18.2 Clinical Pharmacology

18.3 Pharmacokinetics

18.4 Pharmacodynamics

18.5 Pharmacology

19.1 Adults and Pediatric Patients

19.2 Diagnostic Kit

19.3 Glucagon for Injection

20 CLINICAL STUDIES

20.1 Clinical Studies

20.2 Clinical Pharmacology

20.3 Pharmacokinetics

20.4 Pharmacodynamics

20.5 Pharmacology

21 INDICATIONS AND USAGE

21.1 Indications

21.2 Administration

21.3 Dosing Regimen

21.4 Storage
**Recommended Storage**

How Supplied/Storage and Handling

Nonclinical Toxicology

Carcinogenesis, Mutagenesis, Impairment of Fertility

Diagnostic Kit 63323-593-03 1 mg per vial 1 mL single-dose vial of Glucagon for Injection with

Use as a Diagnostic Aid

Treatment of Severe Hypoglycemia

**Route of Administration**

<table>
<thead>
<tr>
<th>Route</th>
<th>Dose</th>
<th>Time of Maximal Effect</th>
<th>Duration of Relaxation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intramuscular</td>
<td>1 mg</td>
<td>30 minutes</td>
<td>8 to 10 minutes</td>
</tr>
<tr>
<td>Intravenous</td>
<td>0.25 to 0.5 mg</td>
<td>5 to 20 minutes</td>
<td>45 seconds</td>
</tr>
</tbody>
</table>

Use reconstituted glucagon solution immediately. Discard any unused portion (68° to 77° F) [see USP Controlled Room Temperature] prior to reconstitution. Do not freeze. Keep in

Glucagon for Injection is supplied as a sterile, lyophilized white powder available as follows:

- **Dosage**
  - For Hypoglycemia: 1 mg
  - For Gastrointestinal Motility: 0.25 to 0.5 mg

**Metabolism**

Following subcutaneous administration of Glucagon for Injection, the median time to reach the peak effect is 7 to 11 minutes.

**Absorption**

The peak effect occurs 2 to 4 minutes after injection.

**Carcinogenesis, Mutagenesis, Impairment of Fertility**

- **Carcinogenesis**
  - Synthetic glucagon was negative in the bacterial reverse mutation assay (Ames test).
  - Synthetic glucagon was negative in the clastogenicity test.
  - Synthetic glucagon was negative in the mouse micronucleus test.

- **Mutagenesis**
  - Synthetic glucagon was negative in the mouse micronucleus test.

- **Impairment of Fertility**
  - Glucagon was not tested in animal fertility studies.
  - Studies in rats have shown that pancreatic glucagon has no effect on fertility.

**Preparation of Dose**

**How should I store Glucagon?**

- Store Glucagon at room temperature between 68°F to 77°F (20°C to 25°C) for up to 24 months (2 years).
- Keep in its original package and out of light.
- Do not store at temperatures outside the recommended range.
- Keep out of the reach of children.

**Disposal of Used Prefilled Syringes**

- Do not throw away the used prefilled syringes with other household waste.
- Follow local regulations for disposal of sharps.

**References**

- FDA
- Manufacturer's website
- Medical literature

**Yours truly,**

[Signature]