

4.6 Pregnancy and lactation

Pregnancy:

There are limited data from the use of *Clostridium botulinum* type A toxin-haemagglutinin complex in pregnant women. Studies in animals have shown reproductive toxicity at doses causing maternal toxicity (see section 5.3).

Dysport should be used during pregnancy only if the benefit justifies any potential risk to the fœtus. Caution should be exercised when prescribing to pregnant women.

Lactation:

It is not known whether *Clostridium botulinum* type A toxin-haemagglutinin complex is excreted in human milk. The excretion of *Clostridium botulinum* type A toxin-haemagglutinin complex in milk has not been studied in animals. The use of *Clostridium botulinum* type A toxin-haemagglutinin complex during lactation cannot be recommended.

4.7 Effects on ability to drive and use machines

There is a potential risk of muscle weakness or visual disturbances which, if experienced, may temporarily impair the ability to drive or operate machinery.

4.8 Undesirable effects

Very common >1/10: Common >1/100, <1/10: Uncommon >1/1000, <1/100: Rare >1/10 000, < 1/1000: Very rare <1/10 000.

Side effects related to spread of toxin distant from the site of administration have been reported (exaggerated muscle weakness, dysphagia, aspiration/ aspiration pneumonia, with fatal outcome in some very rare cases). (see section 4.4).

General

In the clinical trial programme, approximately 28% of the patients treated with Dysport experienced an adverse event.

The following adverse reactions were seen in patients treated across a variety of indications including blepharospasm, hemifacial spasm, torticollis and spasticity associated with either cerebral palsy or stroke:

Nervous system disorders

Rare: Neuralgic amyotrophy

Skin and subcutaneous tissue disorders

Uncommon: Itching

Rare: Skin rashes

General disorders and administration site conditions

Common: Generalised weakness, fatigue, flu-like syndrome, pain / bruising at injection site.

In addition, the following adverse reactions specific to individual indications were reported:

Arm spasticity

Gastrointestinal disorders

Common: Dysphagia

Musculoskeletal and connective tissue disorders

Common: Arm muscle weakness

Injury, poisoning and procedural complications

Common: Accidental injury/falls

Paediatric cerebral palsy spasticity

Gastrointestinal disorders

Common: Diarrhoea

Musculoskeletal and connective tissue disorders

Common: Leg muscle weakness, muscle pain

Renal and urinary disorders

Common: Urinary incontinence

General disorders and administration site conditions

Common: Abnormal gait

Injury, poisoning and procedural complications

Common: Accidental injury due to falling

Accidental injury due to falling and abnormal gait may have been due to the over-weakening of the target muscle and / or the local spread of Dysport to other muscles involved in ambulation and balance.

Spasmodic torticollis

Nervous system disorders

Common: Headache, dizziness, facial pareis

Eye disorders

Common: Blurred vision, visual acuity reduced

Uncommon: Diplopia, ptosis

Respiratory, thoracic and mediastinal disorders

Common: Dysphonia, dyspnoea

Rare: Aspiration

Gastrointestinal disorders

Very Common: Dysphagia, dry mouth

Musculoskeletal and connective tissue disorders

Very Common: Muscle weakness

Common: Neck pain, musculoskeletal pain, myalgia, pain in extremity, musculoskeletal stiffness

Uncommon: Muscle atrophy, jaw disorder

Dysphagia appeared to be dose related and occurred most frequently following injection into the sternomastoid muscle. A soft diet may be required until symptoms resolve.

These side effects may be expected to resolve within two to four weeks.

Blepharospasm and hemifacial spasm

Nervous system disorders

Common: Facial muscle weakness

Uncommon: Facial paralysis

Eye disorders

Very Common: Ptosis

Common: Diplopia, dry eyes, tearing

Rare: Ophthalmoplegia

Skin and subcutaneous tissue disorders

Common: Eyelid oedema

Rare: Entropion

Side effects may occur due to deep or misplaced injections of Dysport temporarily paralysing other nearby muscle groups.

Glabellar Lines

| | |
|--|--|
| Nervous system disorders | <u>Very Common</u> Headache <u>Common</u> Facial paresis (predominantly describes brow paresis) <u>Uncommon</u> Dizziness |
| Eye disorders | <u>Common</u> Asthenopia, Ptosis, Eyelid oedema, Lacrimation increase, Dry eye, Muscle twitching (twitching of muscles around the eyes) <u>Uncommon</u> Visual disturbances, Vision blurred, Diplopia <u>Rare</u> Eye movement disorder |
| Skin and subcutaneous tissue disorders | <u>Uncommon</u> Pruritus, Rash <u>Rare</u> Urticaria |
| General disorders and administration site conditions | <u>Very Common</u> Injection site reactions (e.g. erythema, oedema, irritation, rash, pruritus, paraesthesia, pain, discomfort, stinging and bruising) |
| Immune system disorders | <u>Uncommon</u> Hypersensitivity |

Post-marketing experience

The profile of adverse reactions reported to the Company during post-marketing use reflects the pharmacology of the product and those seen during clinical trials. In addition, hypersensitivity reactions have been reported.

4.9 Overdose

Excessive doses may produce distant and profound neuromuscular paralysis. Overdose could lead to an increased risk of the neurotoxin entering the bloodstream and may cause complications associated with the effects of oral botulinum poisoning (e.g dysphagia and dysphonia). Respiratory support may be required where excessive doses cause paralysis of respiratory muscles. There is no specific antidote; antitoxin should not be expected to be beneficial and general supportive care is advised. In the event of overdose the patient should be medically monitored for signs and /or symptoms of excessive muscle weakness or muscle paralysis. Symptomatic treatment should be instigated if necessary.

Symptoms of overdose may not present immediately following injection. Should accidental injection or oral ingestion occur, the person should be medically supervised for several weeks for signs and/or symptoms of excessive muscle weakness or muscle paralysis.

5 PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic Group: Other muscle relaxants, peripherally acting agents.

ATC code: M03AX01

Clostridium botulinum type A toxin-haemagglutinin complex blocks peripheral cholinergic transmission at the neuromuscular junction by a presynaptic action at a site proximal to the release of acetylcholine. The toxin acts within the nerve ending to antagonise those events that are triggered by Ca²⁺ which culminate in transmitter release. It does not affect postganglionic cholinergic transmission or postganglionic sympathetic transmission.

The action of toxin involves an initial binding step whereby the toxin attaches rapidly and avidly to the presynaptic nerve membrane. Secondly, there is an internalisation step in which toxin crosses the presynaptic membrane, without causing onset of paralysis. Finally the toxin inhibits the release of acetylcholine by disrupting the Ca²⁺ mediated acetylcholine release mechanism, thereby diminishing the endplate potential and causing paralysis.

Recovery of impulse transmission occurs gradually as new nerve terminals sprout and contact is made with the post synaptic motor endplate, a process which takes 6 - 8 weeks in the experimental animal.

Alternative Dysport doses were investigated for the treatment of blepharospasm over 1 treatment cycle in a clinical study.

Efficacy was measured by the medians of differences in the Percentage of Normal Activity (PNA) values (derived from the Blepharospasm Disability Scale) between each treatment group and placebo. A dose-dependent improvement in blepharospasm was evident with increasing Dysport dose, with all treatment groups being superior to placebo.

| Visit | Dysport 40 Units (N=30) | Dysport 80 Units (N=31) | Dysport 120 Units (N=31) |
|--|-------------------------|-------------------------|--------------------------|
| Week 4: Difference between the median of the changes in PNA values from baseline in the active group and the median of the changes in PNA values from baseline in the placebo group | 31.2 % | 41.3 % | 48.5 % |
| Week 8: Difference between the median of the changes in PNA values from baseline in the active group the median of the changes in PNA values from baseline in placebo group | 36.0 % | 48.3 % | 55.0 % |
| Week 12: Difference between the median of the changes in PNA values from baseline in the active group and the median of the changes in PNA values from baseline in placebo group | 36.0 % | 36.3 % | 50.0 % |
| Week 16: Difference between the median of the changes in PNA values from baseline in the active group and the median of the changes in PNA values from baseline in placebo group | 10.5 %[a] | 24.2 % | 31.3 % |

[a] p value > 0.001

For the 40 units, 80 units and 120 units Dysport treatment groups, the medians of the changes from baseline in PNA values were statistically significantly higher compared to those in placebo group at weeks 4, 8, and 12.

A statistically significant difference compared to placebo group was also observed for the 80 units and 120 units Dysport treatment groups at week 16, indicating a greater duration of response at the 80 units and 120 units doses.

The incidence of related Treatment Emergent Adverse Events (TEAEs), specifically ptosis, was higher in the Dysport treatment groups than in the placebo treatment group and was dose-dependent with greater incidence seen at higher Dysport doses. See table below.

| | Statistic | Placebo (N=26) | Dysport 40 Units (N=31) | Dysport 80 Units (N=31) | Dysport 120 Units (N=31) |
|---------------------------------|-----------|----------------|-------------------------|-------------------------|--------------------------|
| Patients with related TEAEs | n (%) | 3 (12) | 19 (61) | 23 (74) | 26 (84) |
| Patients with related eye TEAEs | n (%) | 3 (12) | 16 (52) | 23 (74) | 26 (84) |

5.2 Pharmacokinetic properties

Pharmacokinetic studies with botulinum toxin pose problems in animals because of the high potency, the minute doses involved, the large molecular weight of the compound and the difficulty of labelling toxin to produce sufficiently high specific activity. Studies using I¹²⁵ labelled toxin have shown that the receptor binding is specific and saturable, and the high density of toxin receptors is a contributory factor to the high potency. Dose and time responses in monkeys showed that at low doses there was a delay of 2 - 3 days with peak effect seen 5 - 6 days after injection. The duration of action, measured by changes of ocular alignment and muscle paralysis, varied between 2 weeks and 8 months. This pattern is also seen in man, and is attributed to the process of binding, internalisation and changes at the neuromuscular junction.

5.3 Preclinical safety data

Reproductive toxicity studies in pregnant rats and rabbits given *Clostridium botulinum* type A toxin-haemagglutinin complex by daily intramuscular injection, at doses of 6.6 units/kg (79 units/kg total cumulative dose) and 3.0 units/kg (42 units/kg total cumulative dose) in rats and rabbits respectively, did not result in embryo/foetal toxicity. Implantation losses at maternally toxic doses were observed at higher doses in both species. *Clostridium botulinum* type A toxin-haemagglutinin complex demonstrated no teratogenic activity in either rats or rabbits and no effects were observed in the pre- and postnatal study on the F1 generation in rats. Fertility of male and female rats was decreased due to reduced mating secondary to muscle paralysis at doses of 29.4 units/kg weekly in males and increased implantation loss at 20 units/kg weekly in females.

In a chronic toxicity study performed in rats up to 12 units/animal, there was no indication of systemic toxicity. Effects in chronic toxicity non-clinical studies were limited to changes on injected muscles related to the mechanism of action of *Clostridium botulinum* type A toxin-haemagglutinin complex. There was no ocular irritation following administration of *Clostridium botulinum* type A toxin-haemagglutinin complex into the eyes of rabbits.

6 PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Human albumin solution,

Lactose.

6.2 Incompatibilities

None known.

6.3 Shelf life

The shelf life of the packaged product is 24 months at 2-8°C.

The product may be stored for up to 8 hours at 2-8°C following reconstitution.

Since the product does not contain an antimicrobial agent, from a microbiological point of view, it is recommended that the product should be used immediately following reconstitution.

6.4 Special precautions for storage

Unopened vials must be maintained at temperatures between 2°C and 8°C. Dysport must be stored in a refrigerator at the hospital where the injections are to be carried out and should not be given to the patient to store.

Reconstituted Dysport may be stored in a refrigerator (2-8°C) for up to 8 hours prior to use. Dysport should not be frozen.

6.5 Nature and contents of container

Nature of container/closure:

Type 1 glass vials 3mL capacity. 13mm bromobutyl freeze-drying closures oversealed by 13mm aluminium overseals with centre hole, crimped over.

Contents of container:

A white lyophilised powder for reconstitution.

6.6 Special precautions for disposal

Immediately after treatment of the patient, any residual Dysport which may be present in either vial or syringe should be inactivated with dilute hypochlorite solution (1% available chlorine). Thereafter, all items should be disposed of in accordance with standard hospital practice.

Spillage of Dysport should be wiped up with an absorbent cloth soaked in dilute hypochlorite solution.

7 MARKETING AUTHORISATION HOLDER

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PL 34926/0009

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