VI.2 Elements for a Public Summary

VI.2.1 Overview of disease epidemiology

Cough is a major symptom of various lung conditions and may have different characteristics and duration. Cough is important in the protection of the airways. The treatment chosen depends on whether the cough is dry or producing mucus. Butamirate is used for the treatment of dry cough. Dry cough is a typical symptom in the common cold [1]. Viral infections of the upper airways are the most common cause of acute cough (cough lasting up to 3 weeks). Chronic cough (lasting more than 8 weeks in adults) is quite a common condition found in 10-20% of the adult population [2,3].

VI.2.2 Summary of treatment benefits

The effect of butamirate has been investigated in studies showing it is effectively reducing cough in both adults and children. Other studies have compared the effect of butamirate to other drugs for the treatment of dry cough or irritable cough. These studies show that butamirate is more effective at reducing the cough reflex than codeinone and that there is a similar although quicker effect from butamirate than of hydrocodone. Furthermore, there are improvements to the quality of sleep and less coughing experienced when compared to codeine and phenyltoloxamine.

A study involving 60 patients with irritable cough (caused by seasonal respiratory diseases or chronic cough) comparing butamirate and clobutinol showed that both treatments worked as well as each other at reducing the severity and frequency of cough.

The effect of butamirate versus dextromethorphan was studied in patients with irritable cough. In 29 out of 30 patients treated with butamirate, there was a significant reduction in the severity and frequency of coughing. In 29 of 33 patients receiving dextromethorphan, a reduction of the severity of cough was reported.

The effect of morclofone (a cough suppressant) and butamirate-containing capsules was investigated in 30 geriatric patients suffering from various lung conditions with an irritable cough. The results showed that both products significantly reduced the severity of cough episodes, although morclofone has a more pronounced effect.

In another study, patients with irritable cough (following a viral infection), were treated with butamirate tablets or with capsules containing a combination of codeine and phenyltoloxamine. The study showed both products were effective. However, in the patients treated with butamirate, a greater reduction in coughing was seen, when compared to those treated with the codeine-containing product.

A study in infants and children aged between 6 weeks and 10 years treated with butamirate or zipeprol showed no difference in the two products when looking at coughing, difficulty breathing, sleep quality and the doctor's assessment of the general state of the child [1].

VI.2.3 Unknowns relating to treatment benefits

Based on the currently available data, no gaps in knowledge about efficacy in the target population were identified, that would warrant post-authorisation efficacy studies. Furthermore, there is no evidence to suggest that treatment results would be different in any subgroup of the target population, for any of the indications, taking into account factors such as age, sex, race or organ impairment.

VI.2.4 Summary of safety concerns

Important identified risks

Risk	What is known	Preventability
Use of butamirate together with drugs which aid in the clearance of mucus from the	Butamirate suppresses the cough reflex and therefore should not be used with expectorants (drugs which	Yes, by avoiding the use of expectorants while also using butamirate.

Risk	What is known	Preventability
airways (Concomitant use with expectorants)	aid in the clearance of mucus from the airways) as this could lead to the build-up of mucus in the lungs, possibly causing breathing difficulty and/or lung infection.	
Allergic reactions, such as skin rash (Hypersensitivity)	Butamirate should not be used if the patient is allergic to butamirate or any of the other ingredients of this medicine	Yes, by being aware of symptoms of allergic reactions, such as skin rash. Speak with the doctor about discontinuation of the treatment if an allergic reaction is experienced.
Use in children under 3 years of age	Butamirate should not be used in children under the age of 3.	Yes, avoid the use of butamirate in children under 3 years of age.

Important missing information

Risk	What is known
Use during pregnancy	However, no studies have been conducted in pregnant women; therefore as a precaution it is recommended that butamirate should not be used in the first trimester of pregnancy. During the second and third trimesters of pregnancy, butamirate should only be used if absolutely necessary, taking into consideration the benefit for the mother and the possible risk for the developing baby.
Use during breastfeeding	It is not known if butamirate passes into breast milk, due to this uncertainty the use of butamirate during breast-feeding is not recommended.
Use in patients with reduced kidney or liver function (Use in patients with renal or hepatic impairment)	There is currently very little information available on the use of butamirate in patients with reduced kidney or liver function. Patients with kidney and/or liver disease may be at greater risk of unwanted effects from butamirate because of slow removal of the drug from the body.
Other drugs influencing the effect of butamirate or butamirate influencing the effect of other drugs (Drug interactions)	It has not been investigated if other drugs influence the effect of butamirate when used together. Due to this uncertainty butamirate should not be used with drugs that decrease enzyme activity because of a possible risk of increased amount of butamirate in the body. There is no knowledge of butamirate influencing the effect of other drugs. Nevertheless, patients who take medicine with a small difference between the effective level and toxic level should not use butamirate together with it due to the possible risk of changed exposure of these drugs.

VI.2.5 Summary of risk minimisation measures by safety concern

All medicines have a Summary of Product Characteristics (SmPC) which provides physicians, pharmacists and other health care professionals with details on how to use the medicine, the risks and recommendations for minimising them. An abbreviated version of this in lay language is provided in the form of the package leaflet (PL). The measures in these documents are known as routine risk minimisation measures.

This medicine has no additional risk minimisation measures.

VI.2.6 Planned post authorisation development plan

No post-authorisation safety or efficacy studies are ongoing or are planned to be conducted for butamirate.