

## Botulinum Toxin in the aesthetic treatment – recent update

**Clostridium Botulinum** is the microorganism responsible for the production of botulinum toxin. It is able to produce very resistant spore. Extreme conditions as boiling, salting or smoking do not compromise the survival!

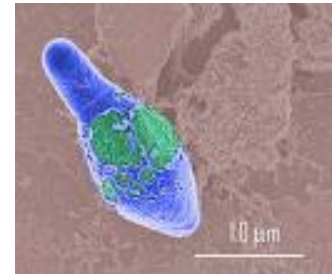
Jams and marmalades are famous because it is in there that the clostridium botulinum lives and produces big quantities of toxin, dangerous for who is going to taste it!

You can easily find spores even in humid atmosphere as soil and stagnant non drinking water (even sea water) and can contaminate some foods that are kept in cans, uncooked, cold meats or hams.

The disease that comes from it, it is the Botulism, obviously alimentary, which provokes death due to respiratory paralysis.

I personally studied the use of Botulinum Toxin in aesthetic medicine, in the treatment of dentistry and for the treatment of hyperhidrosis. I published a scientific book few months ago that talks about this subject. The title is **Botulinum Toxin in Aesthetic Medicine with treatment for hyperhidrosis and in odontostomatology. Basic principles and clinical practice.**

To see the presentation, visit the Book Corner!



### What is the Botulinum Toxin and how does it take effect?

The botulinum toxin has a great impact on the muscular movement. In fact, it penetrates the muscles and the neuromuscular plate avoiding the release of acetylcholine and neuromuscular transmission. Researchers have been able to transform this very dangerous active principle in a medicine used for many indications, even in the aesthetic field.



In Italy the product with aesthetic indications is called Vistabex, but lately two new different preparations were put on the market such as Azzalure and

lately, in January 2011, Bocouture. All these preparations are the same pharmacological products reserved for oculist and neurological use in the hospital.

In Italy Vistabex has been approved for aesthetic use in 2004 and this is valid only for the glabella. This means that on the illustrative paper inside, it is recommended for the reduction of the glabellas' wrinkles.

Azzalure was approved in Italy in 2010 and Bocouture, as said earlier, in January 2011.

I highlight that Botulinum Toxin A on the illustrative paper foresees the treatment only for the glabella, which are the wrinkles between the eyes. In all of the other body districts, it is used "off label", as for the 40% of the medicines used in Italy.

It is absolutely forbidden to use unauthorized Botulinum Toxins in Italy, especially coming from the East. They might not be known and the only advantage is that they are cheaper. I suggest patients to distrust the

medicine when it is too cheap because they hide their real origin and in medicine, especially if aesthetic, you do not want that. It is better to spend a little bit more, but use safe materials.

So in conclusion, the toxin takes effect relaxing the muscle that provokes the wrinkles, and we are obviously talking about the mimic wrinkles, in particular the one of the upper third of face.

But we are obtaining great results also in other districts as the lower third of face, neck and décolleté.

### **What "off label" means?**

It means that there is a large scientific literature that proves its use and there is not other medicine that can have that particular clinical indication. For this particular use, patients need to know everything and be well informed and that is why they have to sign an informed consent where it is clear that the use of botulinum toxin is only for the glabella.

### **Can Botulinum Toxin be dangerous for my health?**

Effects of systemic poisoning due to the toxin after cosmetic treatments are not referred, if not in preliminary studies. The quantity used in cosmetics is very low compared to dangerous doses.

It is different if the toxin can give unwanted effects: if it is injected in muscles, different from the target, the toxin does not make any mistakes and it provokes the weakening of that particular muscle.

But, as I always say, the toxin is never wrong: it does its job! It has been injected in the majority of cases in much exaggerated ways or in dangerous or wrong injective spots!

However, today, there are not defined cases of injuries deriving from botulinum.

Besides, it is strange that there are not discussions regarding the use of botulinum for neurological and oculist indications, even if the side effects are more frequent both for usual dosages and dilutions. Probably the reason is that they are real diseases, while in aesthetic there is not a real pathology.

### **Is the toxin ready for the use or do I need to prepare it at the moment?**

The toxin is lyophilized and it is prepared at the moment of the infiltration. This is the first important step to reduce the side effects. In fact, if it is too diluted, the same quantity of toxin will be diluted in too much water and infiltrations in other districts will occur.

On the contrary if it is not enough diluted, the effect will be very limited in the extension and short in the time.

The ability of the doctor who uses the botulinum toxin is to be able to adapt this detail to specific patient.

### **How is the toxin injected?**

It is injected through syringes for insulin. This will be a very important moment because different syringes allow different precision of implant.

I personally use syringes of 50 U or 30 U (syringe of insulin of 0,3 ml for diabetes).



### **Is the depth of the injection important?**

Absolutely yes! It is fundamental that the muscle is injected precisely; deeper muscle will need deep injections, superficial muscles will need superficial injections.

And when deep and superficial muscles co-exist, the precision of the implant is fundamental!

### **Is it important to study the patient?**

This is another important aspect in order to avoid the side effects and to have good results.

The patient needs to be studied very well with a marker to exactly determine where to inject before poking.

Every patient is different from one another and the injection has to be studied precisely.

### **For what indications can we use Botulinum Toxin?**

#### **Only in the aesthetical field, for wrinkles!**

The toxin has a great effect on wrinkles, as we all know. In these past few years, the use of Vistabex increased exponentially, in few years even more than 1000%.



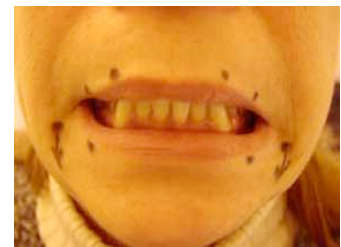
The main indication remains the wrinkles of the upper third of face.

The glabella wrinkles, basically the one between the eyes, are the indications that the Minister of Health believed they could be authorized in the illustrative paper. But surely even the wrinkles of the forehead and the lateral side of the eye take advantages from the injection of the Toxin.

Also the lower third of face is treated more and more. In fact one of the most important actions remains the modulation of the balance between agonist and antagonist muscles. And this is the most important mechanism of action in the modulation of the release of the mandibular edge and in the treatment of the so-called platysma bands.

In the end, the botulinum toxin is very used by some authors to treat the wrinkles of décolleté.

In fact, muscular myofibrils, which go from the deep muscle to the skin, are documented.



With few units of toxin diluted in revitalizing substances, it is possible to reduce this phenomenon and obtain great results even in this district.

### **For perspiration**

The toxin has a very extraordinary effect in the limitation, and sometime even the abolition, of exaggerated perspiration. This effect is visible to all people who tried the toxin on the forehead for aesthetic reason: for several months the sweating on the forehead disappeared.

In the treatment of axillary hyperhidrosis, hands and feet, the results are great, without any side effects.

Also in this case an anaesthetic is used to prevent the pain. Beside, the injections, especially under the arms, are not painful, and the effects are natural.

If the session is done at the beginning of the summertime, the results will be great, being the winter less exposed to the problem! This is one of the field where the toxin represents a truly Copernicus revolution!

### **Is the toxin eternal or it has to be done after a while?**

The toxin needs to be done every six months. There are not collateral effects described today after injecting it. Then, after few months, the aesthetic effect resets.

It is obvious that even the side effects will not last forever, and with the time they will go away and totally disappear.

Usually the injections have to be done every 6 months and I personally do not repeat it at least for four months.

In fact, repeating the injection too frequently can expose to the risk of sensitization and production of antibodies, which could inactivate the toxin.

### **Can the botulinum toxin be done with other treatment?**

In my opinion the toxin is better if it is done alone, this means in a session all by itself.

This is for two reasons:

- there are already many injections, and those injections of toxin cannot be done at the same time where you are executing other treatments.

I mean that in the same session we cannot do the toxin on the glabella wrinkles and another filler as the hyaluronic acid.

We could inject the toxin in the upper third of face and a filler for the nasogenian wrinkles. But...

- ...many facial wrinkles, after the botulinum toxin, improve a lot and the quantity of corrections needed with other techniques decreases proportionally.

For example, the nasogenian wrinkles, after a treatment of botulinum toxin of the mandibular edge, can improve a lot.

For these reasons I usually tend to inject the toxin in a different session, evaluating the results and end it with other corrections after having evaluated the obtained benefits.

In different sessions, instead, there are not any problems. The association with fillers as hyaluronic acid, revitalizations and peeling is basically the rule.

The association with fractioned laser is very interesting.

I do not use non-reabsorbable materials as silicon, polyacrilammide or metylmethacrylicate, which in my opinion are more dangerous.

### **Which advice can we give after a session of Botulinum?**

The patient can not go to the spas or take too hot showers.

Beside, even the physical activities have to be avoided. Also facial massages are forbidden.

But basically you can have a normal life, and you can immediately go back to work.

### **When is it possible to go to the doctor and ask for a session of Botulinum Toxin?**

The average age is from 30 to 65, but in my experience even older people respond to the toxin very well, and even in very selected cases, few defects of young ladies had great feedback without any risks.

As always good sense is needed!

## **Conclusions**

I have always been a great supporter of the botulinum toxin, as many of my publications testify.

To subscribe the administering by inexperienced people. In fact, the toxin has to follow strict rules and a perfect knowledge of the anatomy, injective spots and the dilution is fundamental to have good results.

So, the advice remains the one to ask to expert doctors with a great experience.

As I always tell my patients, the major cost of the session is due to the experience of the doctor!

I would say to avoid "do it yourself" injections, they are very dangerous.

Also to avoid the research of exaggerated results: often the vision of collateral effects that we sometime see also on TV is due to the research of impossible aesthetic results.

Instead if it is done in the limits of caution, going for the "natural look", and the reduction of the movement instead of its abolishment, the botulinum toxin can represent a very powerful weapon in the hands of the doctor.

Alessio Redaelli