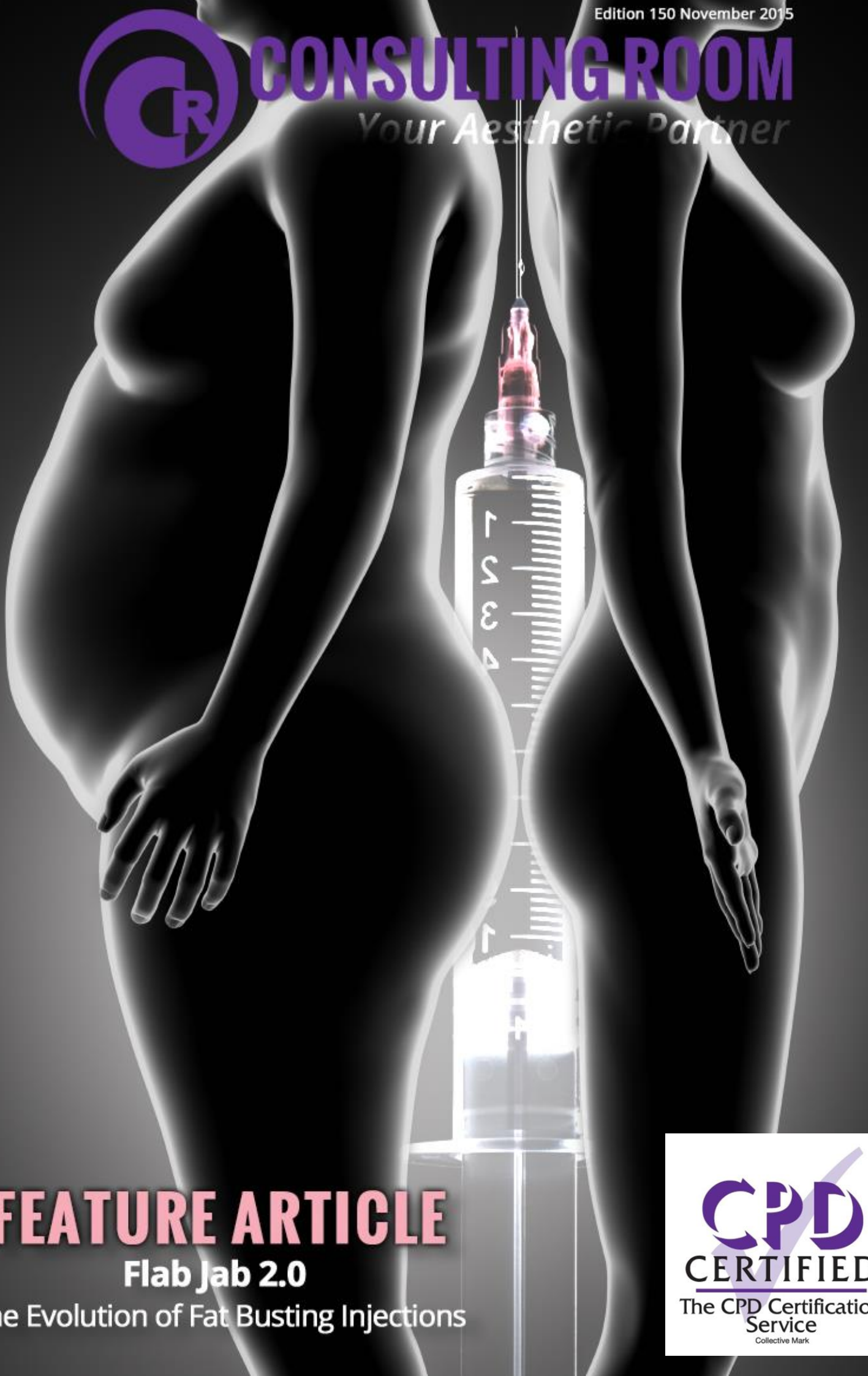
Edition 150 November 2015

CONSULTING ROOM

Your Aesthetic Partner



FEATURE ARTICLE

Flab Jab 2.0

The Evolution of Fat Busting Injections

Feature Article

Flab Jab 2.0 - The Evolution of Fat Busting Injections

Fat…we all have it, and for many of us we have it in places that we'd really rather not. Good sense tells us that a healthy diet and a bit of extra exercise will slim down the majority of the excess fat that plagues us, and stops us from squeezing into our favourite clothes. However, just like children, there will always be that stubborn bit that sits in a corner somewhere and simply refuses to budge!

Traditional methods for removing stubborn pockets of localised fat have relied on the various liposuction techniques and protocols available to cosmetic surgeons, as well as the use of non-surgical energy delivery through modalities such as radio-frequency, cryolipolysis and ultrasound which destroy fat cells through extreme temperatures of either heat or cold.

The concept of using injectable ingredients to target fat cells and lead to their destruction and removal, though not new, is now referred to by many newer names, including: injection lipolysis, lipotherapy or intralipotherapy.

The concept has been around for some time and has courted much controversy in the past, yet here we are talking about it again. Products currently in the marketplace, as well as those still in pipeline research, all contain, in the main, slightly different components or ingredients but target the same ultimate aim. With big pharmaceutical players, like Allergan, now involved in this emerging market sector, it's unlikely to be a short-lived trend. Yet, some products are licensed as medical devices and some as medicines, which has led, as always, to further controversy and much debate within the aesthetic industry, with many noting that any treatment of this type should indeed have the foundation of a prescription only medical treatment. This article explores the history, the primary active ingredients and the key products now entering the marketplace.

So who remembers Flabjab™ then?

Back in 2004 all the buzz was around the use of phosphatidylcholine (PPC / PC) and deoxycholate (DOC / DC) in the prescription only drug Lipostabil™ for injection lipolysis of stubborn areas of fat. In fact we covered this in a **Consulting Room Member Feature Article** (Members Area login required) back in August 2004. Marketed also as Lipomelt, Fat-Away and Lipodissolve in the USA, where a similar product is made by compounding pharmacies, the treatment very quickly became widespread across the UK. In fact, its rise in popularity and acceptance as a solution for unwanted fat, was sealed with a treatment demonstration live on Channel 4's *Richard and Judy* show!

PC is a lecithin, soy-derived phospholipid which is insoluble in water. Thus to make it aqueous and suitable for injection it needs to be added in solution with a detergent, in this case DC which makes it soluble. Lipostabil was first brought to market in Europe by Nattermann International GMBH (now part of the Sanofi-Aventis group) as a solution of 5% PC and 2.5% DC with the addition of vitamin E, sodium hydroxide, ethanol and sterile water. The Lipodissolve version typically includes more DC, on average 4.5%.

To cut a long story short, the use of this drug, for this indication, was not only unapproved and unlicensed in the UK, and off-label for its primary authorised use in Germany (as an intravenous medicine for fat embolism), but also highly controversial given that product safety had not been established for a subcutaneous use for the cosmetic reduction of fat. The manufacturer Sanofi-Aventis was also keen to warn that the drug was not designed nor recommended for this use. At the time of the hysteria, the MHRA had received three reports of potential adverse reactions to the use of Lipostabil in this way and cases where post-treatment infection had caused deep ulcers which needed excision hit the law courts. Adverse event reports included cases of permanent scarring, skin deformations and sensations of painful knots deep beneath the skin where the product was injected.

By the summer of 2005, the Medical Protection Society (MPS) and the Medical Defence Union (MDU) had announced that they would no longer provide medical indemnity cover for doctors using Lipostabil due to the safety

concerns. Alongside warning letters from the MHRA which threatened fines and imprisonment for clinics which continued to market it, the product was essentially outlawed in the UK for cosmetic use to target fat.

There were many who felt that this reaction was premature, that the number of adverse events was limited and as always blamed it on poor training and injection technique and not on the product itself. The **Network-Lipolysis** association, founded in Germany gained in strength and continued to research the use of PC-DC treatments for this indication. But for now, the use of fat-busting injections was all but over for most UK clinicians.

When Lipostabil hit the market and results were noted from its use, it was originally thought that the PC was responsible for the 'fat dissolving' mode of action, but as more studies were undertaken and more data appeared it seemed to most that it was in fact an inactive bystander in the process. Studies started to show that DC on its own, rather than in combination with the PC acts to lyse or destroy fat cell membranes. This led Professor Pasquale Motolese to state in a 2008 published paper that he felt the term 'lipolysis' was inappropriate and in fact it should instead be referred to as 'adipocytolysis', due to the mechanism of action of the DC.

Deoxycholic acid (DC), also known as deoxycholate, cholanic acid and 3α,12α-dihydroxy-5β-cholan-24-oic acid is a bile acid. It has been used for decades in various fields of human medicine and laboratory work. Present in the human body, deoxycholic acid is used in the emulsification of fats for absorption in the intestine.

In terms of its mechanism of action, upon subcutaneous injection, the DC kills off tissue because it has a cytotoxic effect on the membranes of the cell. This causes the fat cells to lyse or effectively dissolve (be destroyed) and release their fatty content into the surrounding area, whereupon the body will start the metabolic processes for elimination. This action, causes immediate swelling and inflammation in the region.

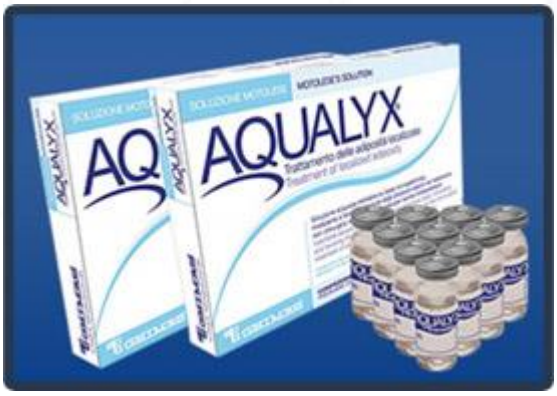
Concerns have been raised in recent years, as more DC-derived products are in pipeline development and being studied, about the use of DC as a sole agent, in terms of the level of aggressive targeting that it can have on fatty tissue (depending on concentrations used) and the potential for it to affect surrounding non-fatty tissue. Various studies have reported on differing concentrations and conditions causing the targeting of non-adipose tissue such as muscle, renal epithelial cells and myocytes, as well as causing fibrosis in adjacent tissues.

According to Network-Lipolysis in 2011, Professor Lukas Prantl of Regensburg University, who has conducted and published studies into the efficacy of DC and PC, drew attention to the fact that deoxycholic acid is an aggressive substance, and pointed out that in combination with phosphatidylcholine its aggressiveness is toned down. He also remarked that the combination of the two substances together (PC-DC) has the further advantage that the fat cells are not just destroyed, but also emptied.

A chapter within the clinical text book, *Update in Cosmetic Dermatology*, also looks at this issue and notes that some clinicians feel that it is safer for the patient if PC is incorporated with DC, with some evidence suggesting that in concentrations of greater than 1%, DC alone can cause profound inflammation, unresolved and long term nodule formation as well as skin necrosis. Yet when combined with PC, concentrations of DC (up to 4.75%) seem less likely to produce such problems. This concurs with the notion that PC has a 'calming' effect on the DC, to the extent that in the presence of PC, almost ten times more DC is required to lyse fat cells and the necrotising effect on fat cells is reduced by a third, compared to when DC is used as a sole agent. The PC thus has an inhibiting effect on the overall action of the DC. Consequently, when used as a sole agent it seems to now be established that DC must be used at much lower concentrations, ideally around 1%.

AQUALYX™

AQUALYX™ is manufactured by the Italian firm Marllor (distributed in the UK by HealthXchange Pharmacy). It was developed by Professor Pasquale Motolese, president of the Italian Society of Aesthetics and Medicine and first introduced to the international marketplace in 2009, and into the UK in 2013. It is sometimes also referred to as 'Motolese's Solution'. It is claimed that over 2 million vials have been used to treat patients in 49 countries worldwide since the launch six years ago.



AQUALYX is a registered medical device, European CE Mark approval was granted in December 2012 (CE no. 129 QPZ 1364 12). However it is worth noting that the CE registration for AQUALYX was granted for use of the solution in a two-step treatment with an external ultrasound device. The product is thus marketed (and practitioners are trained) in the UK for it to be used in conjunction with an ultrasound device.

AQUALYX was developed to treat localised pockets of fat underneath the surface of the skin. It is an injectable treatment of 12α-dihydroxy-5β-24-oico cholanic acid sodium salts, which is a modified compound of cholanic acid. The makers are keen to point out that it is not a simple solution of deoxycholate. It is an aqueous compound solution, with slow-release sugar that reduces the biological half-life of the solution, minimising side effects.

The exact ingredients are a polymer from 3, 6-Anhydro-L-Galactose and D-Galactose (0.5%), buffer systems (4.2%), sodium salt of (3α, 5α, 12α) - 3, 12-dihydroxy-5-cholan-24-acid (7.5%), water for injection purposes (87%) and sodium chloride (0.8%). The buffer system within AQUALYX ensures that the 12alfa-dihydroxy-5beta-24oico cholanic acid sodium salt is delivered directly to the target area, i.e. directly to the membrane of the fat cells, minimising impact on adjacent tissue.

The solution, which is supplied in ready-to-use 8ml vials is injected into the target area, usually at two injection sites, following administration of local anaesthetic or in combination with 0.2ml (2%) lidocaine added by the practitioner to the solution. It is recommended that a maximum of 5 vials be used for any treatment, with 1 vial good for each 10cm x 10cm area. Once administered the 12alfa-dihydroxy-5beta-24-oico cholanic acid sodium salt alters the surface tension of the fat cell membrane and increases the permeability of the membrane. An ultrasound device is then applied over the surface of the skin in the targeted area and this causes the movement of liquids both inside and outside the fat cells. The fat cells start to balloon and break up - known as cavitational adipocitolyses - leading to the drainage of micro droplets of fatty liquid into the body, which is then metabolised through the lymphatic system and excreted.

It is being promoted to treat fat pockets on the back, chin, stomach, underneath the buttocks, hips, thighs and knees, as well as for treating pseudo-gynaecomastia. Treatment programmes will typically require 2 - 8 treatments, 4 weeks apart, although some people may see significant results after 1 or 2 sessions. The number of treatments needed will vary depending on the size and location of the fat pockets - underneath the neck and chin, for example, may require 1 - 3 treatments of 2 - 3 injections, while treatment for fat pockets on the hips and thighs may require 8 treatments.

Side effects appear to be limited to tolerable pain upon treatment, redness, swelling and tenderness at the injected site(s), with some people experiencing light bruising which usually resolves within a few days. Cases of nodules have also been reported, which have been attributed to poor injection technique and practitioner experience, rather than to the product itself. The manufacturers report that to date no major side effects of AQUALYX use have been reported to them, such as ulcers, skin necrosis, scarring etc.

In a **paper** published in The European Journal of Aesthetic Medicine and Dermatology in 2012 by Drs Giovanni Salti and Pasquale Motolese, they looked at the histological findings on adipose tissue obtained from an abdominoplasty procedure which was treated with AQUALXY alone and in combination with ultrasound, as well as control models.

Results showed that the control samples, those infiltrated with a saline solution or just exposed to multi-traumatic needle insertions, showed normal adipose tissue with preservation of the lobular structure. The sample that was infiltrated with AQUALYX alone showed cellular swelling with a ‘split rail’ cellular membrane lipidic bilayer separation. Whilst the sample that had AQUALYX in combination with being exposed to external medium frequency ultrasound, as well as demonstrating the same results as AQUALYX alone, also showed homogenised cytoplasm content with alteration of the lobular structure and widespread areas of cellular destruction.

A **patient satisfaction evaluation** (PDF) published by Hernán Pinto et al in 2012 reported that patients are very satisfied with the results of intralipotherapy treatments with AQUALYX and are even more satisfied after performing a second session.

Neither of these papers represent real patient data on quantitative fat reduction measuring. The closest we get to such data is from a **paper** (PDF) from Dr Raffaele Rauso et al which looked at the use of AQUALYX in treating buffalo hump – the enlargement of the fat pad at the back of the neck said to be linked to HIV-associated lipodystrophy. A 52-year old male was treated for buffalo hump once every three weeks with 8ml of AQUALYX in each session. Four weeks after the treatment a clinical improvement was noted with the fat pad having reduced by 5mm; an 18 month follow up show no relapse of the enlargement.

Ideally, more published data is needed which looks at multiple patients treated across specific treatment areas, such as double chins, love handles, bra bulges and evaluates the reduction on circumferences and fat mass. Granted there are a multitude of before and after pictures now available from clinics and practitioners but empirical data is still lacking.

Most recently Hernán Pinto et al have published another **study** (PDF) in December 2014 which evaluated the adipocytolytic solution of AQUALYX and looked at adverse effects and their relationship with the number of vials

injected. The study looked at 331 treatment sessions on 145 patients treated between July 2011 and June 2012, with application of AQUALYX on the limbs or trunk. The conclusions showed a directly proportional relationship between the number of vials injected and the severity of any adverse effects observed in all application areas. The total number of areas treated did not alter the frequency nor severity of adverse effects. Interestingly, this study makes no mention of the assisted application of ultrasound energy during procedures; an oversight in the writing of the paper or a marker to show that studies are now looking at its use alone, and without its approved CE mark medical device partner? I simply do not know, but an article by Dr. Vincent Wong which featured in **Aesthetics Journal** (PDF) in November 2014 noted that "*in Europe, around two thirds of physicians are not using the ultrasound and are still getting very effective results*". So, if this is the case, what questions does this pose for its market authorisation and classification?

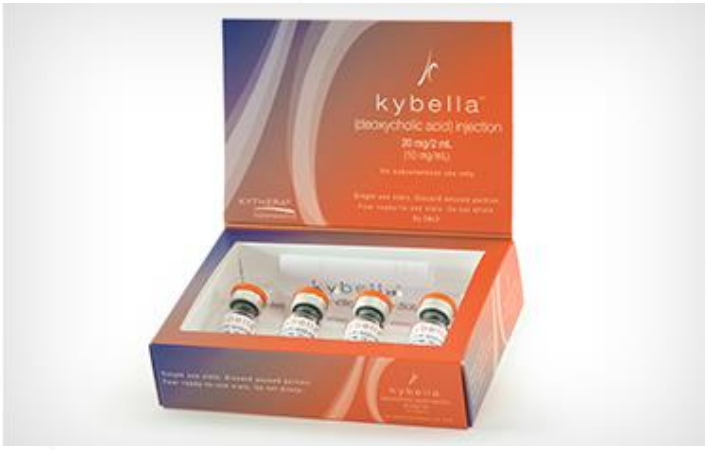
Treatments with AQUALYX are being provided by UK clinics at prices starting from £200 to £250 per session for small areas such as under the chin, up to approximately £400 to £500 per session for larger areas. The product is distributed exclusively in the UK and Ireland by HealthXchange who also carry out all training programmes for doctors. Some UK practitioners also report combining AQUALYX with the use of radio-frequency devices to give added skin tightening results, post fat reduction.

ATX-101 (KYBELLA®)

According to the manufacturers, Kythera Biopharmaceuticals (now part of Allergan plc), ATX-101 has been in development for more than 9 years, with over 20 clinical studies involving more than 2,600 patients to back up the science, safety and efficacy behind it. Thus far, this patented formulation of deoxycholic acid (DC) has only been studied for the treatment of submental fullness or double chins and the manufacturers are keen to point out that its safety and efficacy has not be studied nor established for the reduction of subcutaneous fat in any other areas of the body, and thus cannot be recommended.

Approved by the U.S. FDA in April 2015 for "*improvement in the appearance of moderate to severe convexity or fullness associated with submental fat in adults*"; it is marketed in the USA as **KYBELLA®**. It is also marketed in Canada as BELKYRA™ since approval by Health Canada in July 2015. The drug has also been submitted as ATX-101 (prior to final branding) for medicine licencing authorisation in Europe (submitted August 2015) and Australia (submitted February 2015).

It works by creating an inflammatory response in the fat cells and thus destroying them. This is followed by natural healing, metabolism and elimination by the body. Once destroyed, those fat cells are no longer able to store or accumulate fat.



The product is supplied in the USA as a per patient pack of 4 x 2ml vials (10mg/ml or 1% of deoxycholic acid) which is administered by subcutaneous injections into the submental fat using approximately 0.2ml per injection spaced 1cm apart. Approximately 4 to 6 treatments are needed (hence the pre-defined 4 treatment patient pack), spaced no less than one month apart. Dilution or the addition of other compounds to the product, such as lidocaine is not recommended by the manufacturers, however local anaesthetic may be used in the area prior to the injection of KYBELLA.

Currently available in the USA to trained physicians, the product is sold for single-patient use at a cost of $1,200 for the four vial pack or $300 per vial. With a practitioner premium on top, taking it to over $2,000 or around $500+ per treatment for the consumer, this is arguably not a cheaper option for the patient for targeting unwanted submental fat, with pricing appearing in the same ball-park as liposuction.

"*The patient will need a course of injections, and the outcome is gradual over weeks, so you need to get patients to pay for at least three treatments in advance, and then you need to manage their expectations throughout;"* notes Consulting Room Adviser, Dr. Niroshan Sivathasan who practices in London and Sydney, Australia.

To avoid potential tissue damage, which could manifest as an asymmetric smile or facial muscle weakness (reported by 4% of subjects in clinical trials, all of which resolved), KYBELLA should not be injected into or in close proximity (1-1.5 cm) to the marginal mandibular nerve, salivary glands, lymph nodes and muscles. Avoiding use in patients with current or past history of dysphagia is also recommended as it may exacerbate the condition. The

most commonly reported adverse reactions in clinical trials for KYBELLA were, redness and swelling at the injection site, bruising, pain, numbness and induration. In fact the manufacturers reported that in their clinical trials 72% of people experienced hematoma or bruising, so they urge caution for use in those with bleeding disorders or abnormalities, especially those on antiplatelet or anticoagulant drugs.

Dr. Sivathasan points out; "*There is a risk of dysaesthesias, especially paraesthesia, in the treated area. I personally believe that the reason for this is because of the fat-covering (myelin) around the nerves which gets 'dissolved' as well; this makes sense to me, but I don't know if there is any published scientific evidence.*"

Each 2ml vial contains 20mg of synthetic deoxycholic acid as the active ingredient alongside various inactive ingredients including 18mg of benzyl alcohol, 2.84mg of dibasic sodium phosphate, 8.76mg of sodium chloride, and 2.86mg of sodium hydroxide in sterile water for injection. Hydrochloric acid and additional sodium hydroxide are added as necessary to adjust the formulation to pH 8.3.

Over the last 4 or 5 years, the manufacturers have performed various randomised, double-blind, placebo-controlled trials at multi-centres across the USA, Canada and Europe to gather pivotal data required for medicines approval in the various territories. The U.S. and Canadian Phase III trials, known as REFINE-1 and REFINE-2 (**R**andomised Double-blind **E**valuation of Submental **F**at Reduction **IN** ATX-101 Tr**E**ated Patients) enrolled more than 1,000 patients who were treated with ATX-101 or placebo, in 70 centres. KYTHERA and Bayer, KYTHERA's collaborator outside the USA and Canada, similarly conducted trials of ATX-101 in Europe.

Based on these various trials they have demonstrated results which show that 68.2% of subjects treated with KYBELLA experienced a ≥1-grade improvement with the use of the product compared to 20.5% of placebo-treated subjects; this was based upon validated physician and patient measurements. 16% of patients experienced a ≥2-grade improvement, compared to 2% of patients who responded to placebo. Similarly KYBELLA treatment resulted in high patient satisfaction – 79% of patients reported satisfaction with their appearance in association with their face and chin. Patients also reported improvement in the visual and emotional impact of submental fat when asked how happy, bothered, self-conscious, embarrassed, old and overweight they felt following treatment in relation to the amount of their submental fat.

Consulting Room Adviser, Dr. David Eccleston from MediZen Clinics in Sutton Coldfield, participated as a UK investigator in one of the **European trials** which looked at the efficacy, patient-reported outcomes and safety profile of ATX-101. Commenting on the work he did and his observations, David said; "*The trial compared two concentrations of ATX-101 against placebo in the submental area. It was immediately obvious who was having placebo, as the active product caused severe burning pain on injection, bringing several subjects to tears. However, these subjects also noticed a significant reduction in submental fat volume, as well as a tightening effect on the skin resulting in a visible improvement in the cervicomental angle. Pain management will, in my opinion, be essential, but it is not yet clear whether the use of lidocaine or similar injectable local anaesthetics will reduce the efficacy of the product. Anecdotally, even those who had good results were divided as to whether these results justified going through the pain experienced on injection*".

A quick look at *Pubmed* reveals that many more studies have been published this year, in relation to the product, so a body of data is certainly being gathered and Allergan is well known for its support for clinical trial work.

Of course what everyone is really asking, even before this product makes it to the UK is - can it be used to treat fat in other areas of the body than the so far approved submental region? Studies thus far, both for patent and regulatory applications, have focused on treating subcutaneous fat in the chin and neck region only. Issues faced when considering whether the product has applications in other areas of subcutaneous fat include what the dose and treatment protocol would be for other regions, whether it could be used to remedy liposuction defects and irregularities for example, whether there are any effects on other proximal tissues, whether improvement in other treated areas would be regular in nature or if irregularities and indentations could occur, and finally whether it would be too expensive to use, as a liposuction or energy delivered treatment alternative, in other, larger areas of the body, given the existing costs to treat the small under-chin region.

American clinicians are however already combining it with other treatments with some U.S. dermatologists and surgeons, such as Dr. Jason Emer combining it with cryolipolysis and others with liposuction, by adding in KYBELLA either before or after for improved results.

LIPO-202

LIPO-202, manufactured by Neothetics (formerly known as Lithera), is actually an injectable form of salmeterol xinafoate, a beta-2 adrenergic receptor which is primarily used and approved in the treatment of asthma via inhalers. The injectable form of the drug has been found to also shrink fat cells and be effective in reducing

abdominal fat. The manufacturers have shown that salmeterol xinafoate activates beta-2-adrenergic receptors on fat cells, triggering the metabolism of triglycerides stored in the fat cells and thereby shrink them by means of lipolysis. This finding adds yet another active ingredient being invested for injection lipolysis.

It has been **reported** that phase III trials were beginning in the U.S. at the start of 2015 which will focus on regulatory approval for the reduction of central abdominal bugling due to subcutaneous fat (in non-obese patients), i.e. for a pot-belly, pouch or stomach roll; an indication which does not currently have an FDA approved drug associated with it.

Those investigating this use, including American Dermatologists Marina Peredo and Mark Nestor, state that the procedure is likely to be very quick to delivery, with for example, approximately twenty injections made about 4cm apart at the site of an abdominal bulge. The protocol would include weekly repeat treatments on the patient for approximately eight weeks, with results being noticeable after around one month. Thus far it is said to be painless with little, to no, downtime.

Results from their phase II trials were published two years ago in September 2013 and looked at optimal dosing, safety and efficacy for LIPO-202. In a multi-centre, randomised, placebo-controlled trial on 513 healthy, non-obese individuals who had abdominal bulging due to excess subcutaneous fat, they tested three doses of the LIPO-202 at 0.4, 1.0 and 4.0µg. Results showed the optimum to be 0.4µg or 20 times 0.02µg/ml injections. Patients showed a mean reduction in circumference at the umbilicus of 1.6cm versus 0.65cm for placebo. The average reduction in abdominal volume in the treatment zone was 192cc for the 0.4µg LIPO-202 dose versus 68cc for placebo. Adverse events were limited to those similar to placebo with mild and transient reactions at the injection site. As yet, studies have not shown how long-lasting treatment is as the fat cells are not destroyed.

Although current studies are focused on the abdominal bulge, the company have identified other areas of the body where LIPO-202 could potentially be effective for localised fat reduction and may well develop it and study it for targeting other areas in the longer term. It plans to submit a new drug application to the U.S. FDA in the second half of 2016. Very much a case of one to watch!

Summary

Looking back over the decade it is clear to see that the concept of injection lipolysis, and the active ingredients used, has been an evolutionary one - from phosphatidylcholine and deoxycholic acid in Lipostabil and all the controversies that this brought with it, to greater understanding of both the components and their mechanisms of action, and now moving into the future with products that utilise solely deoxycholic acid derived products or even find new and innovative applications for existing medicines. However, I do feel that just like when Lipostabil arrived on the scene, controversy is just waiting in the wings to jump out on us all again in the coming year or so.

There are many within the aesthetic industry who question whether a medical device certification (CE Mark) is an appropriate classification for such products and such applications. This is of course targeted at AQUALYX. The feeling is that given that it has a pharmacological effect on the fat tissue where it is injected, it should be classified as a prescription only medicine (POM). Given the length of time it can take to achieve a marketing authorisation for a new drug, it has been proposed that pursuing the medical device approval for the injectable solution for use in conjunction with the application of ultrasound energy was perhaps the swiftest option to market, and Europe provides this easy option. The MHRA were made aware of AQUALYX use in the UK from September 2013, but thus far has not made any comment on its licence status or approached the UK distributor.

ATX-101, when (rather than if) it gets its European Marketing Authorisation will be a prescription only medicine. Yet AQUALYX, containing a similarly compounded deoxycholate (albeit with its buffer system) does not require a prescription; something of an uneven playing field you might say, both in terms of marketing and how practitioners deliver treatment.

Unlike in America where the promotion and marketing of prescription only medicines such as Botox® is not prohibited, as it is in the UK, the marketing of KYBELLA is easy. For those operating aesthetic clinics in the United Kingdom, this approach won't work and advertising is restricted by law which will pose the same issues as currently faced by clinics trying to skirt around the advertising of botulinum toxins. Something which won't be an issue for those marketing the non-prescription AQUALYX.

So, what will happen? Will there be a challenge to the MHRA to ask them to investigate if AQUALYX really should be classified as a prescription only medicine and not a medical device? Who knows, but I am pretty sure that this won't be the last time we talk about this!

When asked for feedback on this issue, one well-known UK doctor stated; "*AQUALYX is not a medical device and its registration as such is simply a devious path to the marketplace. It should be a prescription only medication, used only by those with the knowledge to administer it, and who are appropriately equipped to manage all potential adverse events. As with any prescription medication the company responsible for it should have a Medical Affairs Department able to gather all adverse events and to report them appropriately to the MHRA.*"

Dr. David Eccleston concurs; "*I still maintain that all injectable lipolytic agents should be classified as POMs, as the adverse effects seen in the past from Lipostabil still lurk in the background, and prescribers have a responsibility to protect their patients from harm. POM product access to non-prescribing injectors is easy due to a few unscrupulous prescribers, as is seen by the increasing number of beauty therapists offering botulinum toxin injections and the like. It is only through reclassifying the likes of AQUALYX as a POM that a degree of control can be regained and patient safety maximised*".

That aside, we then have the battle over efficacy, in terms of which produces the best results, as well as differences across the targeted use, which for AXT-101 is likely to be limited to under the chin until all the off-label creativity starts. I have already noted that data for AQUALYX is pretty limited, apart from a scattering of before and after pictures on the manufacturer's website, despite there being several hundred UK based clinics now offering the treatment who could probably compile an anecdotal review in a heartbeat, but which would of course lack the peer-approved clout of a controlled study. Currently, with a lack of credible data for AQUALYX it means I have no answer for those who tell me "*well it doesn't really work that well*" as I can't point to any contradictory findings. Will this oversight come back to bite the manufacturer sooner rather than later when ATX-101 arrives with its barrel-load of trial results? Will we indeed see comparative trials in the future perhaps – who knows?

With so many unanswered questions I think this will be something that we will be returning to discuss, both in articles and blogs to come, but also I expect it to be heavily debated on the conference circuit during 2016. Don't say I didn't warn you!

Further References:

Facial Rejuvenation: A Total Approach, David Goldberg

Cellulite: Pathophysiology and Treatment, Mitchel P Goldman, Doris Hexsel

Disorder of Fat and Cellulite: Advances in Diagnosis and Treatment, David J Goldberg, Alexander L. Berlin

Office-Based Cosmetic Procedures and Techniques, Sorin Eremia

Update in Cosmetic Dermatology , Antonella Tosti, Doris Hexsel

Kybella Prescribing Information

LIPO-202 enters Phase 3 trials for injectable fat reduction
Cosmetic Surgery Times

Aesthetic Treatment of Central Abdominal Bulging (CAB) with LIPO-202 (Salmeterol Xinafoate for Injection), Lincoln M. Krochmal, V. Leroy Young, Kenneth W. Locke, Michael H. Gold, Steven R. Cohen, Scott D. Glazer, Marina I. Peredo and John H. Joseph. Journal of Dermatology and Clinical Research.

Lorna Jackson

Lorna has been Editor of The Consulting Room™, the UK's largest aesthetic information website, for over a decade, since 2003. She has become an industry commentator on a number of different areas related to the aesthetic industry, collating and evaluating statistics, plus researching, investigating and writing feature articles, blogs, newsletters and reports for The Consulting Room™ and various consumer and trade publications, including *Cosmetic News, Journal of Aesthetic Nursing, Body Language*, *PMFA News*, *Aesthetic Medicine* and *Aesthetic Dentistry Today.* Lorna has also been asked to present at various industry events, including Smart Ideas, BACN and Merz Aesthetics Business Workshops, the FACE Conference and the Clinical, Cosmetic & Reconstructive (CCR) Expo. She was awarded *Journalist of the Year* at the MyFaceMyBody Awards 2014.

CPD CERTIFIED

The CPD Certification Service

The content of the following has been certified by the CPD Certification Service as conforming to continuing professional development principles.

Flab Jab 2.0 - The Evolution of Fat Busting Injections Literature

CONSULTINGROOM.COM

Date: February 2016

Certificate No: A001547

The CPD Certification Service, The Coach House, Ealing Green, London W5 5ER. Tel: 020 8840 4383 Fax: 020 8579 3991
E-mail: info@cpduk.co.uk Web: www.cpduk.co.uk