CLINICAL STUDY

REDUCTION OF LOCALIZED AND GENERALIZED ADIPOSE TISSUE BY CONTROLLED COOLING IN ABDOMEN AREA

(Controlled cooling and vacuum circuit using CoolTech® procedure)

Dr. Xavier Sánchez Tarrago, diploma in aesthetic medicine and aging

COCOON MEDICAL

ABSTRACT:

BACKGROUND

New procedures to get a fat layer reduction and firming and modelling the body are continuously improving their features and methods of work. Since some years ago and until these days, the most common invasive way to remove fat tissue out of the body is by using liposuction procedure. The results of this process are contrasted but not out of risk. This is the reason that impulses to work improving no-invasive procedures with the purpose of become in real alternatives so as to reduce fatty tissue, cellulitis and firming and modelling the body. Working on this way, Cooltechnology (Cryotechnology) device uses the newest non-invasive process that focuses controlled cooling, at very low temperatures until -8°C, in a controlled way in order to get an aesthetic benefit by reducing cellulitis, adipose tissue and localized obesity.

OBJECTIVE

The objective of this clinical study pretends to assess the efficacy of the treatment of CoolTech® procedure using Cooltechnology (Cryotechnology) device by using the application of controlled cooling through skin contact with a vacuum system for getting a beneficial reduction of the localized and generalized adipose tissue, in abdomen as a target area of this study. The clinical study also aims to assess the safety of this treatment, analysing the possible side effects produced after a treatment and monitoring their evolution during the following visits.

METHOD OF STUDY

During a period of 3 months, a group of a determinate number of patients (47 patients) was subjected to the controlled cooling and vacuum system treatment, using Cooltechnology (Cryotechnology) dispositive, in order to assess the different fat reduction in abdomen area. CoolTech® procedures treatment applies a temperature of -8° to carry out this clinical study. During the evolution of the clinical study, the monitoring of all the treatments were performed taking photographs and measuring the circumference of the target zone at baseline and during following visits. Finally, the clinical study is focused on assess the possible side effects occurred during the treatment. A subjective assessment was performed in order to estimate the satisfaction of the patients.

RESULTS

Final results of the 47 patients at the end of the period of 3 month were analysed and recorded in different graphics. The average of fat layer reduction measured through the circumference reduction in the target area (abdomen) was 4.8 cm ± 1.2 cm. These visible results after finishing the analysis demonstrate that the target area of each patient suffer a reduction of circumference and the consequent reduction of localized adipose tissue in abdomen. Most common side effects during these treatments were also recorded according patients response and sensations after the treatment and during following visits.

CONCLUSION

Cooltechnology (Cryotechnology) device applying controlled cooling and vacuum therapy guarantees best results in a non-invasive way to the reduction of adipose tissue, cellulite and localized obesity to the patient. The study concludes that the reduction of fat tissue and visible results of the treatment explained above are more beneficial for the patient than the possible risk occasioned during the treatment.

INTRODUCTION AND APPLIED TECHNOLOGY:

New procedures to get a fat layer reduction and firming and modelling the body are continuously improving their features and methods of work. Numerous studies are pretending to demonstrate that non-invasive treatments are the solution to get the best aesthetical results for all bodies with-out the several risks using invasive and ancient ways.

Since some years ago and until these days, the most common invasive way to remove fat tissue out of the body is by using liposuction procedure. The results of this process are contrasted but not out of risk. Invasive treatments require an operation what means local or general anaesthesia, stitches, cures, post-operation process and also recovery process.

This is the reason that impulse several companies to work improving no-invasive procedures with the purpose of become in real alternatives against liposuction and other invasive aesthetical and medical treatments so as to reduce and remove fatty tissue, cellulitis and firming and modelling the body.

Thereby, radiofrequency that focuses current to the skin in order to reduce cellulitis and body firming, cavitation that works on broken the fat by using ultrasound energy, laser technology to remove fat cells by using non visible light energy or pressotherapy for lymphatic drainage are common and most usually aesthetical and medical treatments that are becoming the alternative to invasive and surgical treatments, improving their methods of work and thinking on the patient safety and comfort during and after the treatment.

Working on this way, this company has several years of experience applying latest technologies for medical and aesthetical non-invasive and pain-free procedures with the purpose of continuously improve the methods of use these technologies thinking on the patient safety and comfort.

Cooltechnology (Cryotechnology) device uses the newest non-invasive process that focuses controlled cooling, at very low temperatures until -8°C, in a controlled way in order to get an aesthetic benefit. Cooltechnology (Cryotechnology) is designed to use the contrasted efficacy of cold for fat removal treatments applied to adipose tissue and cellulite through the skin during a period of time not less than 60 minutes.

This newest procedure pretends to obtain the best results in a non-invasive way of the reduction of cellulite and adipose tissue protecting any other tissue or collagen.

Through the mechanism of suction, the localized fat of the target area penetrates into the cavity of applicator being separated and therefore isolated what causes lessening of blood flow during the period of the treatment (not less than 60 minutes) in order to keep separated the fatty tissue to increase the effect of the cold applied. Skin or other tissues are protected throughout the treatment by using a protective membrane specially designed for cold therapies to avoid damage in skin during the treatment. The device incorporates a small areas accessory that is optional for cases with low or compact fat tissue or small areas of the body. This accessory limits the vacuum area but maintain the cold area what maintain the efficacy of cold applied during the treatment.

Cold therapy induced in a precise controlled way using temperature sensors which measures in real time the temperature of the two cooling plates situated into the applicator. Cooling is induced for the necessary period of time (not less than 60 minutes). After this process, when the treatment and vacuum are finished, fat tissue returns to their normal situation, and the exposure to the cold of fatty tissue increments blood flow on the target area what ends in a natural process of fatty tissue

and localized adiposity elimination. CoolTech® treatments can vary their efficacy depending on the composition of the adipose tissue of the patients.

Cooltechnology (Cryotechnology) device incorporates two handles to treat two areas at same time what increments the target area and limits the time of treatment what entails on comfort for the patient. The device has an emergency stop on the central unit to finish the treatment in case of any problem. The treatment begins and stops using the pushbutton situated on the handle, the treatment can be stopped by the patient using this pushbutton.

OBJECTIVES:

The main objective of this clinical study pretends to assess the efficacy of the CoolTech® procedure by using the application of controlled cooling through skin contact with a vacuum system for getting a beneficial reduction of the localized and generalized adipose tissue, in abdomen as a target area of this study. The clinical study also aims to assess the safety of this treatment, analysing the possible side effects produced after a treatment and monitoring their evolution during the following visits.

METHOD OF STUDY:

METHOD

The present clinical study has been carried out at High Technology Products installations under supervision of a medical and aesthetical doctor who was attendant to perform the treatments. Two handles Cooltechnology (Cryotechnology) device were used to apply the treatment. During a period of 3 months, a group of a determinate number of patients (47 patients) was subjected to the controlled cooling and vacuum system treatment, using the above dispositive, in order to assess the different fat reduction in abdomen area. Depending on the patient response to the process and the applied area, a second treatment had been performed in order to increase the efficacy of the results, during a period between 6 - 8 weeks after the first session. The representative sample of patients was selected including the following inclusion criteria: Both sex and a range of ages between 20 and 60 years; localized and generalized adipose tissue in abdomen area and patients with and IMC between a range of 29-35, which indicates an excess of fatty tissue without obesity problems.

Before the first session there was a preview control for all patients. Firstly, a medical history including pathological history and clinical analysis (CBC and functional biochemistry) of each patient was performed. Clinical history was used in order to exclude any contraindication unfitted for the treatment, according to the adverts included on the treatment information of CoolTech® procedure; as an example; renal insufficiency, liver or hepatic problems, cryoglobulinemia, hipoproteinemia, infectious process or pregnancy. Other aspects included on the exclusion criteria were patients who had performed other aesthetical treatments to reduce fat tissue such us ultrasound or carboxitherapy at the same area to be treated, patients in an active diet, patient which suffer stress or discomfort with their obesity or morbid obesity. Then, a consent sheet informing the complete procedure and possible side effects after the treatment was signed for all the patients before the first session, allowing its exposure to the treatment. Finally, the monitoring of the treatment of all the patients during the different sessions has been saved on a patient sheet to compare and analyse the results of the process.

See table 1 to see demographic dates.

Prior to begin any treatment, the target area (abdomen in this case) has to be cleaned and shaved to guarantee a good suction and avoid

suction losses during the treatment. The intended area is measured using a skinfold calliper in order to calculate the density of adipose tissue. Depending on the density, texture or treated area, the *small areas accessory* could be necessary to guarantee results and safety for the patient during the treatment. This special accessory is highly recommended when the adipose tissue is hard, do not have more elasticity or the treated area is small such as arms or lips. Using it the vacuum area is reduced but the cold area remains equal, so the treatment must not lose efficacy. To avoid burning on the skin during the treatment by the exposure to below 0°C temperatures an antifreezing membrane supplied by the company is used in all treatments.

CoolTech® treatment applies a temperature of -8° to carry out this clinical study. The treatment stops immediately if this temperature goes down of the programed value or if the difference of the cold plates is substantial what indicates an error in the control of the cooling power, to guarantee the safety and comfort of the patient. Vacuum parameters are predetermined according to the density of fat previously measured. These parameters vary between 200 to 240 mBar. It is considered that this pressure is not harmful for the patient (the maximum vacuum pressure for the device is 250 mBar). The duration of study treatments is 60 minutes. The device has a security push-button to guarantee the safety of the patients in case of bad sensations during the treatment or pain in the treated area.

When the treatment is finished, the target area must be massaged to relax the tissue. This non-invasive treatment does not require anaesthesia or rehabilitation process, is comfortable for the patients and allows returning to their normal activities once the treatment is finished.

MONITORING

During the evolution of the clinical study, the monitoring of all the treatments were performed taking photographs on the target zone at baseline (before the first session), immediately after the session and during the following visits. The measure of the circumference of the target zone was also measured at baseline and after the treatment, following the above process, to compare the results of each patient. Finally, the clinical study is focused on assess the possible side effects occurred during the treatment, specially controlling possible hematomas, burnings, inflammation process or temporary paraesthesia at the target area.

After the clinical pre-evaluation of the patients, a group of 47 patients begin the procedure. All the patients finish the treatment that may be one or two sessions (with a maximum of 3 treatments in special cases). It is considered in this affirmation that not all the patients were subjected to a second treatment. 37 of the patients whose were subjected to the treatment were female and the remaining 10 were male. The average age of the patients was 37 years, between a range of 20 years the younger and 60 years the elder (focusing the patients age range between 25 to 40 years). The treatment area was focused on abdomen (target zone of the study), however, new studies are necessary to assess the results and side effects in some different areas of the body by using the CoolTech® using Cooltechnology (Cryotechnology) device. One session in abdomen area is mainly required, but depending on the response of the patient, the side effects and visible results, a second session may be required in order to assess the complete treatment of the patient.

A determinate number of patients (26 patients) was subjected to a second treatment at the same area with the intention of increase the results of the process, if it was considered necessary, or according to the response and sensations during the first treatment, if it was

comfortable or did not present important side effects after the first treatment. The second treatment was performed 8 weeks after the first session at the target area. It is recommended, to guarantee that possible side effects cannot increase their damage, that the second treatment is not performed until 6-8 weeks after the first treatment. The same area was treated a maximum of three times. To repeat the treatments, at second time, were necessary some manual drainage and massage at the target zone in order to stimulate it.

The temperature of the skin were monitored, using an infrared thermometer, at the end of the treatment to study the temperature of the target zone during the process and assure that arrives to the programmed value of the treatment.

Photographs:

Different photographs of each treatment were performed at the target zone (abdomen) during the present clinical evaluation. The camera was always positioned at the same position using a tripod. Each patient was also positioned at the same position. At the beginning of the treatment, three or four photographs were taken before the first session of each patient (baseline), at the position of 0° (180°, if necessary), 90° and 270°. The distance of the camera was always the same, around 1 meter, and at the same position using the tripod. All the photographs were recorded on a patient's sheet (that was actualised during all treatments). Just finishing the first treatment, the procedure of photographs was repeated to compare the results immediately after the performed treatment. Finally, at the following visits of 1 month, 2 months and 3 months the process was also repeated under the same conditions that the first time: position (angle and distance) and background. To compare the results, all the photographs were recorded of a patient´s sheet.

Contour measures:

Different circumference measures of each patient were performed during the present clinical evaluation. The circumference of the target zone (abdomen) was always taken using the same procedure: the arms extended in cross and at the same position according to a defined point of the treated area, market with a permanent marker (if necessary). Before the first treatment, the circumference of the treated area was measured at the defined point (according the procedure explained above). After that, two more measures were taken to compare results: 4 centimetres above the defined point and 4 centimetres below the defined point. Just finishing the first treatment and at following visits (15 days, 1 month, 2 months and 3 months, not all the cases were analysed at all of this times) the process of circumference measurements was repeated to compare and analyse the visible results with the baseline measured at first time, under the same conditions.

Subjective assessment:

Subjective assessment was performed according the patient sensation by using a visual analogue scale. In order to assess the sensation of the treatment all patient were asked between the ranges of: very good, good, correct or bad.

Safety evaluation and side effects:

To study the clinical safety of the patient, the side effects viewed during the treatments were analysed. To do it, different photographs focused on the treated area were taken in all treatments performed (if necessary) and recorded on the patient´s sheet. Most common side effects during these processes were slight or intense pain immediately after finishing the session that is not kept during more than one

hour, associated to the suction of skin. Slight pain during next two weeks after the first session can appear together with inflammation and redness (in some cases) which is associated to the process of cold temperature (-8°) damaging the fat tissue, applied to the target area during the treatment. Sporadically, bruising on target area can appear after the treatment, depending on the skin of the patient and depending on the kind of tissue. The results reflect that in abdomen area is not usually that bruising appears easily. Generally, areas with tough tissue or small areas with low fatty tissue are likely to appear bruising (flanks, thighs, etc.).

Paraesthesia or numbness is common that could appear after the treatments because of the cold exposure during a large period of time since one week to eight weeks depending on the patient. It is associated to superficial skin damage. Skin tingling and insensibility in the target zone are principal symptoms of this effect. Patients can notice changes on the touch of the target area after the session.

More studies in different areas must be necessaries to assess these side effects appeared during the treatment.

RESULTS:

To assess effectively the visible results of fat reduction and side effects using CoolTech® procedure with a temperature treatment of -8°C, the recorded photographs taken during the different treatments performed were analysed.

The different photographs were analysed to compare different visible results on fatty tissue reduction and in order to compare possible side effects appeared and visible during the treatment performed.

To compare these results, fat reduction and different side effects appeared have been studied separately and the results are expressed in this clinical evaluation using different methods described below.

Results of fat tissue reduction after the treatment:

During the corporal results in the target area of study (abdomen) visible results of the circumference measurements were recorded for each patient at different visits until finishing the complete process. 26 of the 47 patients (that begin the treatment) were exposed to a second treatment in order to increase the final results on fat reduction. The second treatment was performed 8 weeks after the first session. 4 weeks after the second treatment the circumference measure was recorded in order to assess the results of this second treatment. It was noticed after this second treatment at the same area (abdomen) an effective but minor reduction because of the quantity of fatty tissue was less than at the beginning of the study.

Final results of the 47 patients at the end of the period of 3 month were analysed and recorded in different graphics. After the analysis of the results, the average of fat layer reduction measured through the circumference reduction in the target area (abdomen) in centimetres (for all the treatments performed in the period above described) was 4.8 cm with a standard deviation of 1.2 cm (4.8 cm ± 1.2 cm). These visible results after finishing the analysis demonstrate that the target area of each patient suffer a reduction of circumference and the consequent reduction of localized adipose tissue in abdomen. The partial results during the process were also recorded to assess the progress of fat layer reduction during 15 days and 1 month after the first session.

As said above, 26 of the 47 patients were subjected to a second treatment two months after the first session. The progress evaluation of the patients subjected to two sessions was recorded by analysing the visible results of the circumference measure just before the second session (6-8 weeks before the first treatment). The results were analysed together with the

final results described above (when the complete treatment were finished, 3 month after the first session). In general terms, the fat layer reduction by measuring the circumference of the target area (abdomen) was 2.0 cm. The total of fat layer reduction measured at the circumference of abdomen area for the 26 patients who performed a second treatment was 6.4 cm with an standard deviation of 1.1 cm (6.4 cm ± 1.1 cm). The percentage of fat reduction in first treatment according with the measurement of the circumference in the target area was 66% of the total reduction after the complete treatment. The remaining 34% was the reduction of fat tissue after the second treatment.

See graphics 1, 2 and 3 which describes the results.

Subjective evaluation record of the treatment:

As explained in subjective evaluation method, it was performed a visual analogue scale in order to assess the patient´s sensation after the treatment. The results recorded for this subjective evaluation was: very good, 22 patients (which means the 47% of the patient's record); good, 15 patients (which means 32% of the patient's record); correct, 7 patients (which mean 15% of the patient's record) and bad, 3 patients (which mean the 6% of the patient's record). The results show that 94% of the patients were satisfied of the results, sensation and side effects of the treatment. Increasing the evaluation of the results, 80% of the patients assessed the treatment as very good or good what means a big satisfaction about the procedure. 6% of patients declared the treatment as bad; this conclusion was specifically based on pain sensation and visible side effects or non-visible results in a minor measure.

See graphic 4 to see the results.

Patients can also notice changes on the touch of the target area after the session.

Visible side effects recorded after the treatment:

According to treatments response of the patients after the sessions, to study the clinical safety of the patient, as said above, the side effects viewed during the treatments were analysed. To do it, different photographs focused on the treated area were taken in all treatments performed and recorded on the patient´s sheet. The sensation of the patient after the treatment was also assessed by studying the comfort and safety of the patient after the treatment and during the following visits to guarantee a correct evolution of the tissue.

Most common side effects during these treatments were slight or intense pain immediately after finishing the session that is not kept during more than one hour, associated to the suction of skin. Slight pain during next Two weeks after the first session was recorded in some different patients appear generally together with inflammation and redness (in some cases) which is associated to the process of cold temperature (-8°) damaging the fat tissue, applied to the target area during the treatment. Sporadically, bruising on target area appeared after the treatment was recorded, depending on the skin of the patient and depending on the kind of tissue. The results reflect that in abdomen area is not usually that bruising appears easily. Generally, areas with tough tissue or small areas with low fatty tissue are likely to appear bruising (flanks, thighs, etc.).

Paraesthesia or numbness has been the most common symptom registered after CoolTech® treatments in all patients because of the cold exposure during a large period of time. Numbness on skin can have length since one week to eight weeks depending on the patient. Skin tingling and insensibility in the target zone are principal symptoms of this effe

There are no indications of more painful effects recorded during these treatments. Blister associated to burns on skin were not recorded. Giving numbers to these results, numbness (paraesthesia) in the target area was recorded in 100% of cases, in more or less quantity. This effect was solved during next 3 weeks in 66% of the patients, the other 34% solved this effect since 3 weeks after the first treatment until 8 weeks, just before were subjected to the second treatment. All the patients who were exposed to a second treatment had noticed that all the side effects had been solved and there were no problems by the exposure to a second treatment.

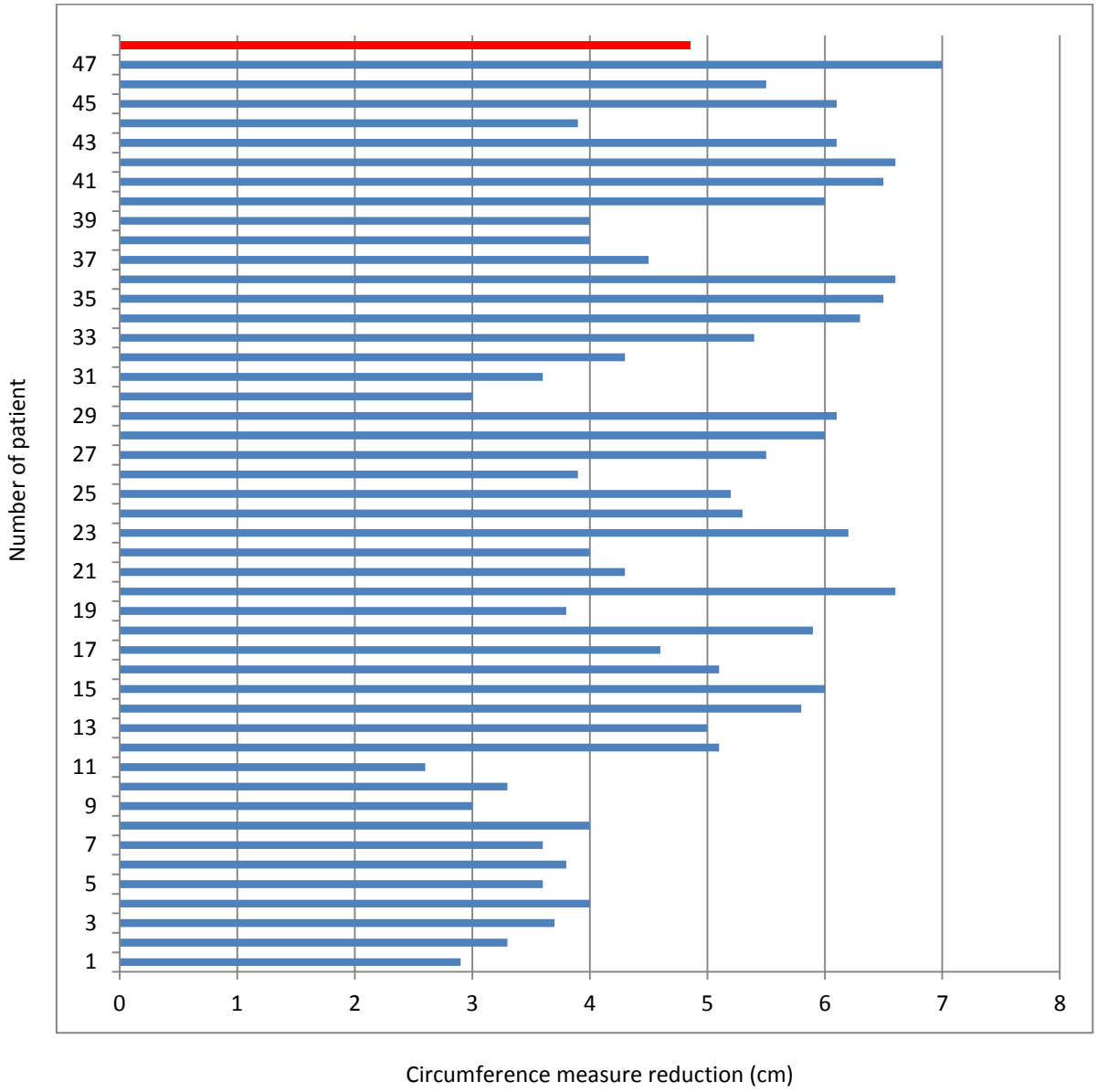
Nearly 60% of the patients suffered pain during next two weeks after the first treatment. Only 20% of this patients suffered intense pain and nearly 40% had slight pain that was solved during the first week after the treatment. 40% of the patients do not suffer any kind of pain after the treatment or during next weeks. More than 50% of these cases were together with inflammation (60%). Nearly 1 in 5 patients that were subjected to the treatment suffered tough pain just at the moment when the treatment finished. This kind of pain is associated to the vacuum process because fat tissue was compact or hard or because the skin has not good elasticity. Generally, this intense pain goes together with bruising immediately after the treatment.

See graphic 5 in order to assess the results

After the final analysis of the results, seeing non important side effects or malfunctions on treatments and according with the visible results obtained, it is considered that the final reduction circumference visible in the majority of patients and their sensations during the process was more beneficial than the risk of side effects present on CoolTech® procedure using Cooltechnology (Cryotechnology) device.

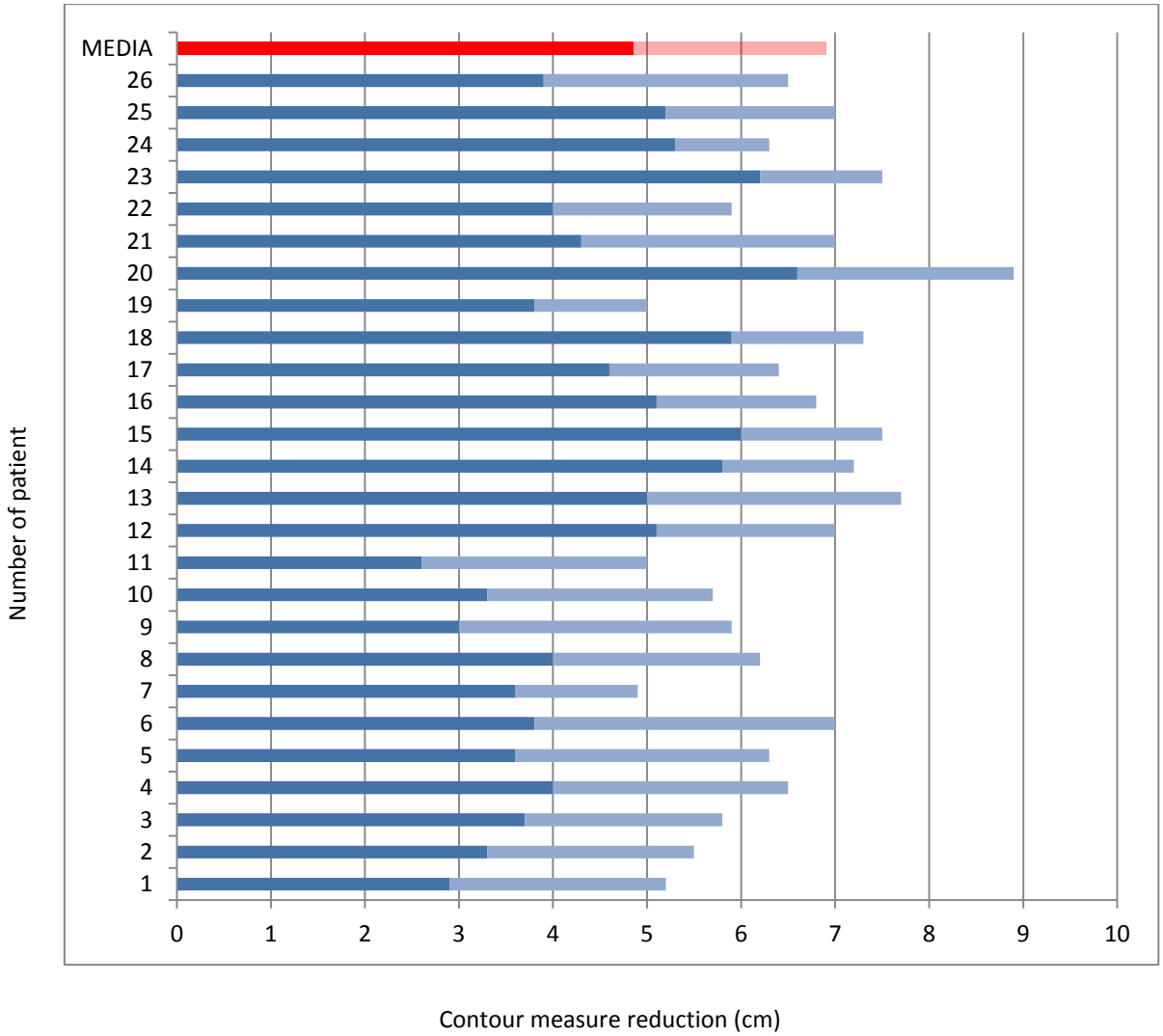
GRAPHIC RESULTS

Graphic 1: Abdomen results after finishing the treatment:

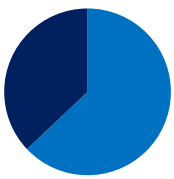


This first graphic show the final results obtained for each patient by measuring the circumference reduction on the target zone 3 months after the first treatment. The average of fat reduction is also shown to compare the deviation of each individual patient.

Graphic 2: Abdomen evolution and difference between first and second treatment:

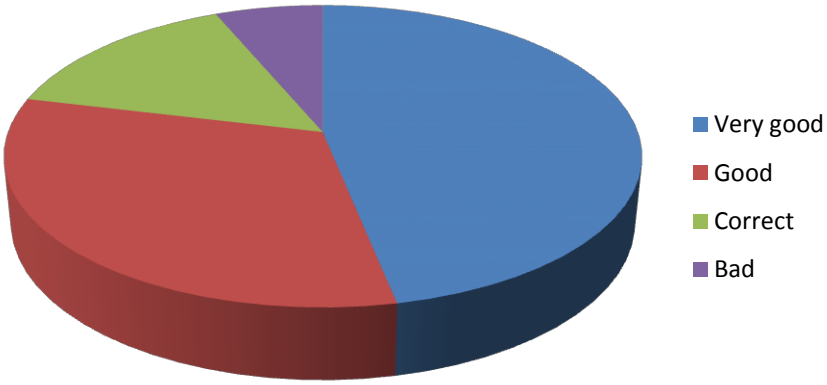


This graphic shows the evolution of circumference reduction of the sixteen patients who were exposed to the second treatment. The first line indicates the results after the first session (2 month after the treatment). The second line indicates the final results according to the above graphic.



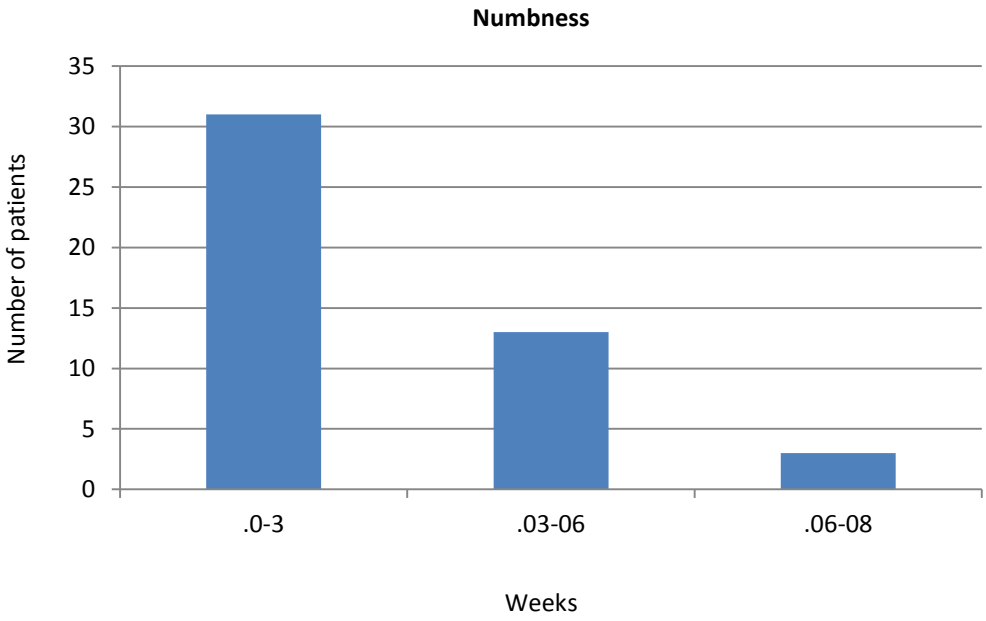
Graphic 3: Evolution of circumference reduction during two treatments. 66% of the total reduction after first session and 34 % when the treatment is complete.

Graphic 4: Subjective assessment of the treatment:

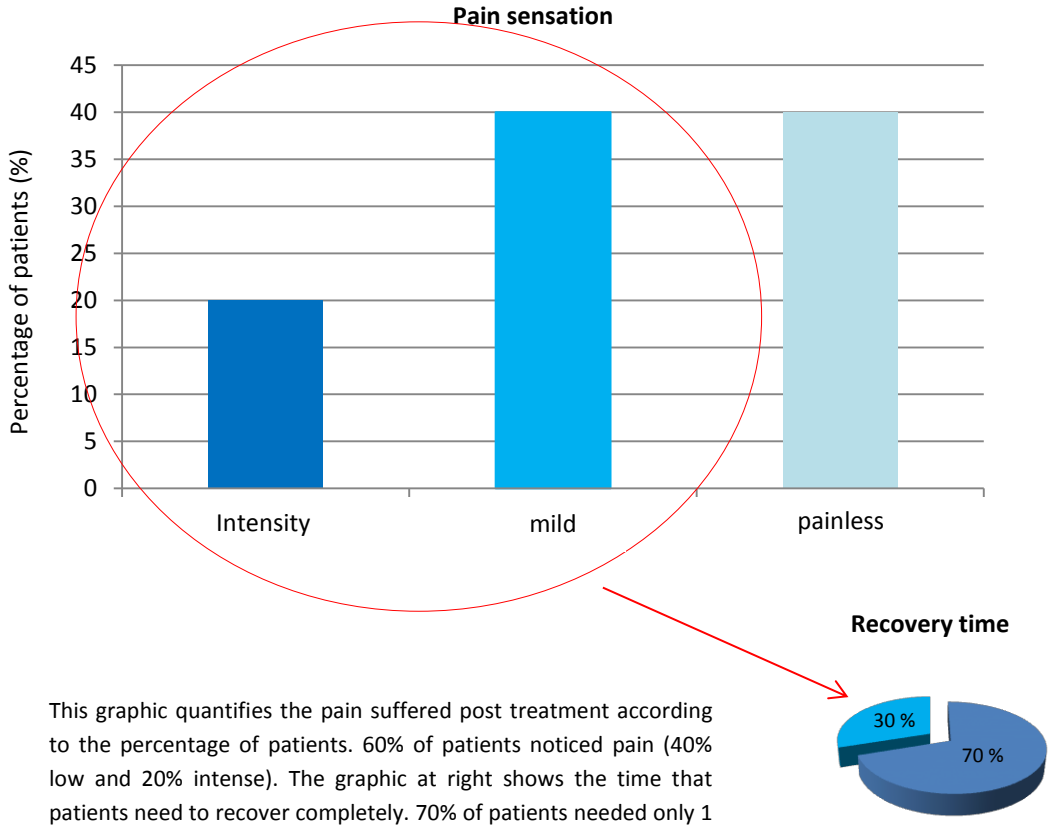


The graphic pretends to assess the results of subjective sensation of the patients. According to the results nearly 95% of the patients was satisfied, with very good, good or correct, with the treatment.

Graphic 5: Evolution of side effects recorded during the treatment:



This graphic show the evolution of numbness (paraesthesia) at the skin during following visits. 66% of the patients recovered all sensation in a period of 3 weeks after the first treatment. Nearly of 24% recovered their normal situation in a period of 3 to 6 weeks.



This graphic quantifies the pain suffered post treatment according to the percentage of patients. 60% of patients noticed pain (40% low and 20% intense). The graphic at right shows the time that patients need to recover completely. 70% of patients needed only 1 week and 30% needed no more than 2 weeks.

List 1. Demographical dates

PACIENTE	*EDAD*	*IMC*	*SEXO*
1	28	31,2	F
2	36	29,2	F
3	41	30	F
4	44	33,1	M
5	43	32,2	F
6	52	32,4	F
7	26	33	F
8	28	33,5	M
9	35	29,6	F
10	43	29,7	F
11	53	31	F
12	39	29,9	F
13	39	32,2	F
14	24	31,5	F
15	38	32	F
16	46	32,2	F
17	56	33,2	M
18	28	31,9	F
19	31	31,8	M
20	29	30	F
21	31	32	M
22	44	31,4	F
23	25	31,8	M
24	52	34	M

PACIENTE	*EDAD*	*IMC*	*SEXO*
25	59	32,5	F
26	27	32,2	F
27	26	33	F
28	28	33,2	F
29	25	33,3	F
30	25	31,5	F
31	47	31,9	F
32	23	31,8	F
33	51	34,5	M
34	32	33,3	F
35	45	34,2	M
36	46	32,8	F
37	45	32,8	F
38	25	29,7	F
39	26	32	F
40	54	34,7	M
41	38	31	F
42	36	31,1	F
43	40	31,6	F
44	40	31,6	F
45	47	31,8	F
46	53	33,6	F
47	31	33,5	F

CONCLUSION:

The present clinical study performed of CoolTech® procedure by using Cooltechnology (Cryotechnology) treatments applying controlled cooling in a non-invasive way demonstrate the efficacy of the reduction of fatty tissue, focused on abdomen area, with the results obtained during this clinical evaluation of results and side effects. Circumference measures reduction and the different photographs performed during the process guarantee the best results in a non-invasive. Immediate visible results after the first treatment (15 days after) and following visits (during the monitoring of the reduction process) in some different patients exposed demonstrate the positive results of this reduction, specially focused in abdomen area. However, more studies are necessary to guarantee results in some different specific areas such as knees, arms, etc. It is noticed that not only this treatments have been studied using this device instead of this object of study, obtaining results of reduction in circumference measurements in around 90% of patients subjected to the treatment.

On the other hand, to guarantee the safety and comfort for the patient applying CoolTech® procedure by using Cooltechnology (Cryotechnology) device, the study concludes that the reduction of fat tissue and visible results of the treatment explained above are more beneficial for the patient than the possible risk occasioned during the treatment. Based on the visible results and patient response and sensations immediately after the treatment and during following visits, there are only minor side effects such us bruising in some patients (not generally), possible intense pain just after finishing the treatment associated to the vacuum process disappearing after a maximum of two hours generally or light pain during two weeks after the treatment associated to the effect of cold in fatty tissue pretended to be removed. Numbness at skin in the target area (Paraesthesia) induced by cold effect is most common side effect that affects nearly 100% of the patients. All patients recovery their sensations during a maximum of two months after the treatment (generally patients required less time) what means that this risk returns reasonable compared with the benefits of the treatment. There are no indication of major problems or injuries such us blisters or burnings associated to bad exposure to cold therapy, so, hereby; the treatment is comfortable to the patient with occasionally pain after the treatment solved in posterior days.

CoolTech® procedure by using Cooltechnology (Cryotechnology) device applying controlled cooling and vacuum therapy guarantees best results in a non-invasive way to the reduction of adipose tissue. This treatment do not need recovery process and permit the patient returning to their normal life just after the treatment becoming a principal alternative to invasive therapies such us liposuction which requires operation, anaesthesia and a medium-large post-operatory treatment.