

Large auto-hemoinfusion versus rectal insufflation in patients with metabolic syndrome

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Abstract

The metabolic syndrome is a clinical situation including a series of factors at high cardiovascular risk; the treatment with an oxygen-ozone gas mixture can influence all factors associated with this syndrome. The objective of the study has been to verify if the rectal insufflation could replace the large auto-hemoinfusion when treating the metabolic syndrome in those patients who, for various reasons cannot use the auto-hemoinfusion. Twenty-four individuals aged between 34 and 68 were recruited and included in the group treated with ozonated auto-hemoinfusion and other 24 individuals aged between 35 and 67 were recruited and included in the group treated with rectal insufflation of the oxygen-ozone gas mixture. According to the results obtained by means of oxygen-ozone mixture rectal insufflation, which are almost equivalent to the results obtained with the large ozonated auto-hemoinfusion, authors could conclude that the ozonated rectal insufflation can be taken into consideration as alternative method to the large auto-hemoinfusion, while treating the metabolic syndrome, in those patients difficult to manage due to the previously described reasons.

Introduction

The definition metabolic syndrome (X syndrome, insulin resistance syndrome, or Reaven's syndrome) means a clinical situation including a series of factors at high cardiovascular risk whose symptoms may show simultaneously in the individual.¹⁻⁴

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The insulin resistance, typical of metabolic syndrome, is a pathological condition representing a characteristic of the people from the most industrialized countries where it is mostly spread.^{5,6}

The condition characterizing it is the excess weight: the more it is the greater will be the chances to develop the metabolic syndrome.

An excess of body fat, above all if concentrated in the abdominal region (visceral obesity), leads to a metabolic imbalance of fats and sugars, causing hyperinsulinemia with an increased resistance to such hormone.⁷⁻¹⁰

Certainly, regardless of its effect on insulin sensitivity, the treatment with an oxygen-ozone (O₂-O₃) gas mixture administered both through auto-hemoinfusion and rectal insufflation can influence all factors associated with metabolic syndrome.¹¹⁻³¹

In light of the above, the objective of the study has been to verify if the rectal insufflation could replace the large auto-hemoinfusion when treating the metabolic syndrome in those patients who, for various reasons (rejection due to fear, aversion to the method, lipothymia when seeing blood, religious reasons, or because of difficulties in finding a venous access) cannot use the auto-hemoinfusion.

Materials and Methods

Twenty-four individuals aged between 34 and 68 (the average was 54.7 years) were recruited and included in the group treated with ozonated auto-hemoinfusion and other 24 individuals aged between 35 and 67 (the average was 53.9 years) were recruited and included in the group treated with rectal insufflation of the oxygen-ozone gas mixture, who participated in this treatment study to evaluate comparatively the effectiveness of the treatment through rectal insufflation and therefore to propose it as an alternative treatment to ozonated auto-hemoinfusion in those patients suffering from such pathology.

To select the individuals for the study the authors took into account the factors considered by the National Cholesterol Education Program Adult Treatment Panel III (NCEP-ATP III) (2001),^{32,33} that is to say, the presence of 3 or more of the following risk factors: i) central obesity: abdominal circumference >102 cm (males) and >88 cm (females); ii) fasting glycemia: \geq 110 mg/dL; iii) triglycerides: \geq 150 mg/dL; iv) high-density lipoproteins cholesterol: <40 mg/dL (males) and <50 mg/dL (females); v) arterial pressure: \geq 135/85 mmHg (or under pharmacological therapy).

Another factor, which is not included in the ATP III classification, is the C-reactive protein that authors wanted to take into consideration since it often increases in patients with metabolic syndrome.

All participants in the study showing positivity for specific biomarkers of metabolic syndrome have been divided into two quite homogeneous groups according to age, sex and metabolic characteristics.

The first group, made up of 24 subjects, between males and females, underwent 15 biweekly sessions of large ozonated auto-hemoinfusion.

The total blood quantity taken during each session was equal to 200

mL, while the chosen ozone concentration, which was considered as optimal, was of 4000 µg for a total volume of 100 mL of O₂-O₃ mixture.

The second group, equivalent to the first one in terms of number, sex and age (Group B) underwent 15 biweekly sessions of rectal insufflations.

The same total ozone concentration has been used also for the second group, in order to make the study method as much homogeneous and equivalent as possible.

In fact, the total mixture quantity used in each session was of 200 mL, with an ozone concentration of 20 µg/mL, in order to obtain 4000 µg in total.

Results

Results are summarized in Figures 1-9: none of the treated patients followed a diet adjustment nor used physiotherapeutic supplements or specific medicines to treat the pathology due to which they have been recruited for this observational study; none of the patients, belonging to both groups had to stop treatments, nor due to adverse reactions to ozone or to personal reasons of refusal to go on with the therapy.

Discussion and Conclusions

Giving as a fact that the ideal therapy to treat the metabolic syndrome is to increase physical activity and reduce the body weight; in those cases less receptive to nutritional advice, it is possible, to associate with them medicines or supplements and, above all, the oxygen-

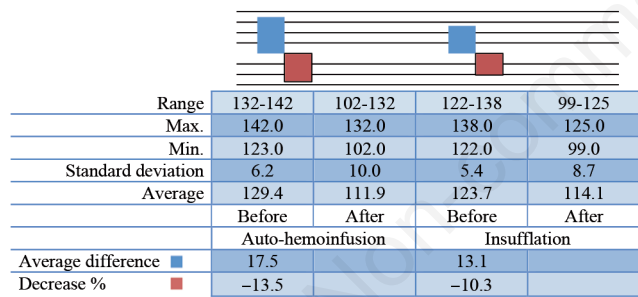


Figure 1. Waistline (No. 8 males).

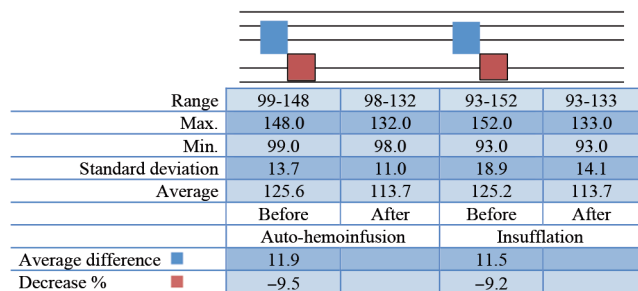


Figure 2. Waistline (No. 16 females).

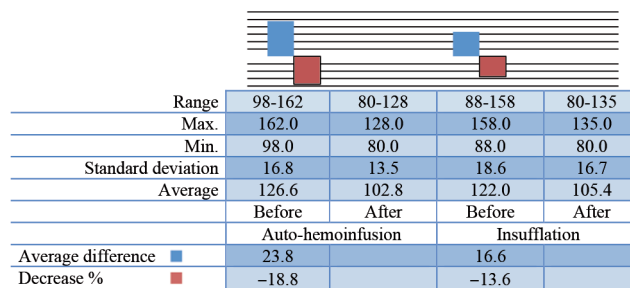


Figure 3. Glycemia (No. 24).

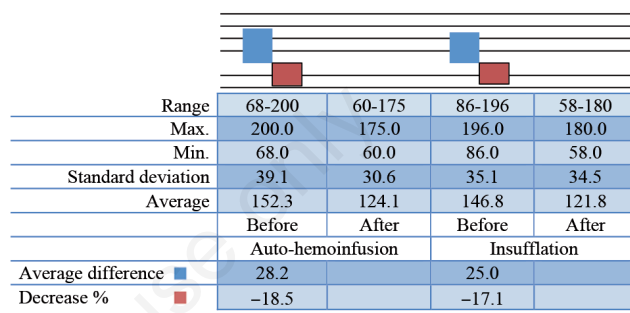


Figure 4. Triglycerides (No. 24).

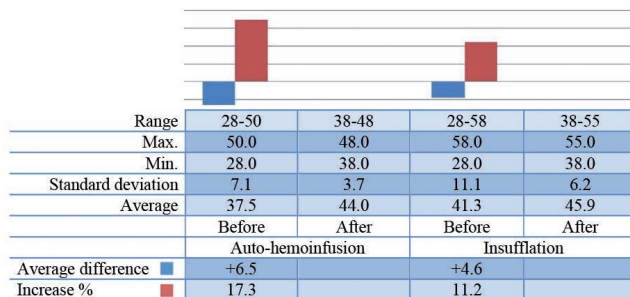


Figure 5. High-density lipoproteins cholesterol (No. 8 males).

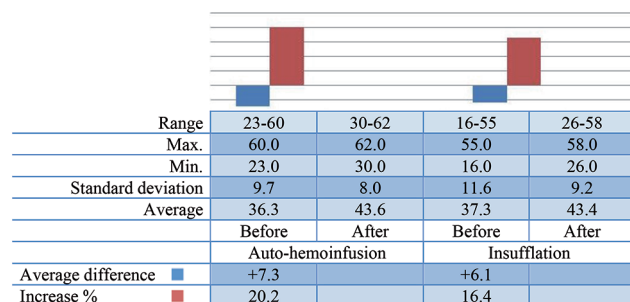


Figure 6. High-density lipoproteins cholesterol (No. 16 females).

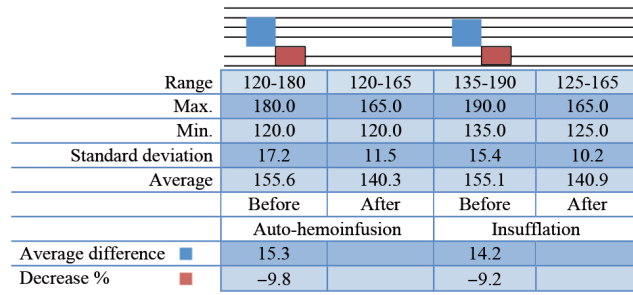


Figure 7. Systolic pressure.

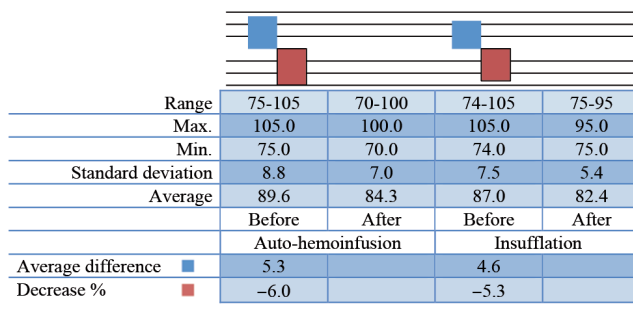


Figure 8. Diastolic pressure.

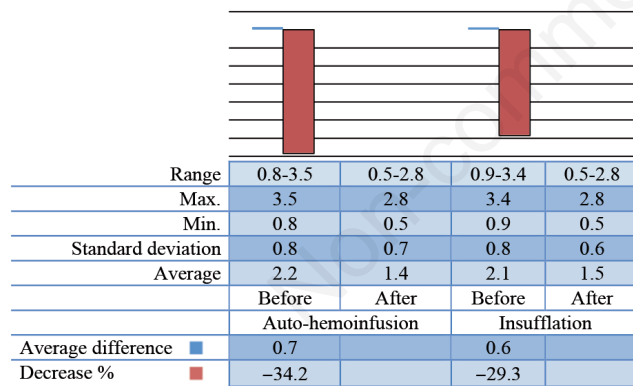


Figure 9. C-reactive protein.

ozone therapy (both as auto-hemoinfusion and as rectal insufflation) to reduce arterial pressure, glycaemia and to improve the other parameters taken into consideration.

Therefore it is necessary to specify that the weight loss and physical activity represent the best practices to prevent and treat the metabolic syndrome; and it is important to know if suffering or not from metabolic syndrome in order to change the lifestyle before severe complications occur.

In terms of improvement of the metabolic markers taken into consid-

eration and considered as very satisfactory from the statistical significance point of view, according to the results obtained by means of oxygen-ozone mixture rectal insufflation, which are almost equivalent to the results obtained with the large ozonated auto-hemoinfusion, authors could conclude that the ozonated rectal insufflation can be taken into consideration as alternative method to the large auto-hemoinfusion, while treating the metabolic syndrome, in those patients difficult to manage due to the previously described reasons.

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