

# Trial 132: Clinical results of treatment with the lactic yeast *Kluyveromyces B0399* for Irritable Bowel Syndrome

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## 0-SUMMARY:

Irritable Bowel Syndrome is provoked by a multitude of causes (physiological, psychological, environmental and behavioral) therefore no effective specific therapy exists, but rather multiple therapies that are aimed at the causes which are subjectively most important. This study, based on the gathering of symptomatological data before and after the treatment, demonstrates that the prolonged use of *Kluyveromyces marxianus fragilis* B0399 significantly improves the clinical picture and above all improves the quality of life of these patients.

The 50 patients whose absence of pathological alterations worthy of mention was verified were asked to answer a series of questions asked by the physician that summarize the diagnostic criteria of Roma (I, II and III). This questionnaire, defined as pre-administration, refers back to the study conducted at the University Hospital of Manchester (Francis et al., 1996) recommended in "Design of Treatment Trials for Functional Gastrointestinal Disorders" (Irvine et al., 2006), considered the reference guide of the EFSA.

## 1-INTRODUCTION:

Since 1998, the use of the lactic yeast *Kluyveromyces marxianus fragilis* B0399 is applied as a support aimed at significantly limiting the symptomatology of the irritable colon, giving significant proof of effectiveness, so much so as to encourage further study.

The objective of this study was to verify if the cyclical use of the lactic yeast *Kluyveromyces marxianus fragilis* B0399 improves the symptomatology in patients affected by Irritable Bowel Syndrome (IBS). The utilization of subjects affected by IBS is recognized internationally (as illustrated in "The EFSA Journal (2008)853,1-15) as experimentation aimed at proving the effectiveness in reducing "intestinal discomfort".

International groups of experts, brought together for the theme of Functional Gastrointestinal Disorders, have elaborated diagnostic criteria, known by the name of Roma I, II and III and have defined IBS as being **"a group of functional intestinal disorders, in which abdominal pain is associated with defecation or the modification of the routine of the intestine or the subjective perception of altered defecation."** IBS is also defined as being a dysfunction and can include disorders known as: irritable colon, spastic colitis or simply colitis.

## Diagnosis

The diagnosis of IBS is based on an accurate evaluation of clinical symptoms and on the exclusion of other pathologies. A method had recently been set up consistent measuring fecal Calprotectina. In this way, the organic disease (colitis) is distinguished from the alteration of the functional state and is therefore considered to be the best means to confirm the diagnosis of IBS, excluding other pathologies such as intestinal inflammatory disease (IBS), poor absorption, tumors, infections (*Histolytic entamoeba*, *Yersinia*, *Campylobacter jejuni*, *Giardia*, etc), diets too rich in sorbitol, fructose, fiber, lactose, the use of laxatives or drugs rich in magnesium.

## **2- MATERIALS AND METHODS**

### **2.1- The active ingredient**

The active ingredient is the lactic yeast *Kluyveromyces marxianus fragilis B0399*, produced by Turval Laboratories of Udine.

The product in capsule is already in commerce in pharmacies and has been notarized by the Ministry of Health.

### **2.2- Selection of the group to be examined and method.**

Fifty people who came under our observation during the past two years were selected; none of the subjects presented other pathologies, gastroenterological or otherwise. None were using any type of drug. They had symptoms which indicated Irritable Bowel Syndrome.

The 50 patients whose absence of pathological alterations worthy of mention was verified were asked to answered a series of question asked by the physician that summarize the diagnostic criteria of Roma (I, II and III). This questionnaire, defined as pre-administration, refers back to the study conducted at the University Hospital of Manchester (Francis at all, 1996) recommended in "Design of Treatment Trials for Functional Gastrointestinal Disorders" (Irvine at all., 2006), considered the reference guide of the EFSA.

The people who resulted in being suitable and were part of the program were adequately instructed on the lifestyle to follow, foods and dietary mistakes to avoid (coffee, carbonated drinks, alcohol, hot spices, legumes, cocoa, milk and dairy products, oily dry fruit, etc.)

At the end of treatment, the 50 patients were asked to answered a series of question defined as post-administration.

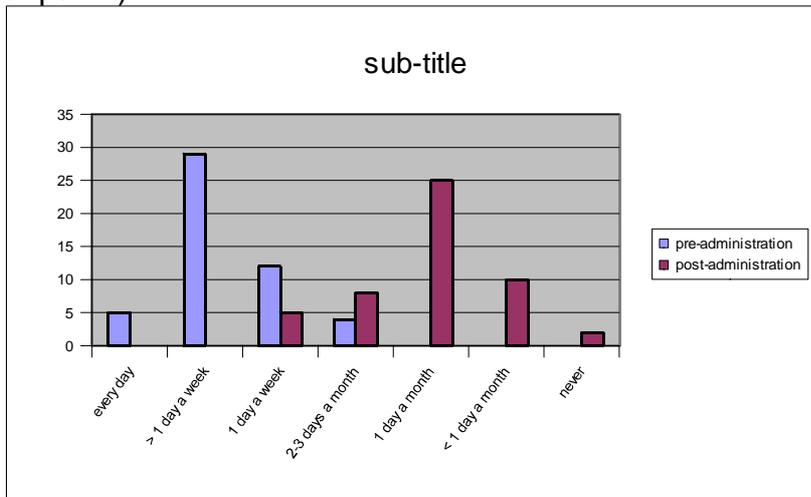
### **2.3-Daily dosage**

The experimentation in exam consisted in the administration of one capsule every twelve hours for a month and a maintenance period with one capsule before breakfast for two months.

Based on the information provided by the producing company, one capsule contains not less than 10/20 million live cells of lactic yeast.

### 3- RESULTS AND COMMENTS:

The **first question** (In the past three months have you experienced abdominal discomfort or pain?).



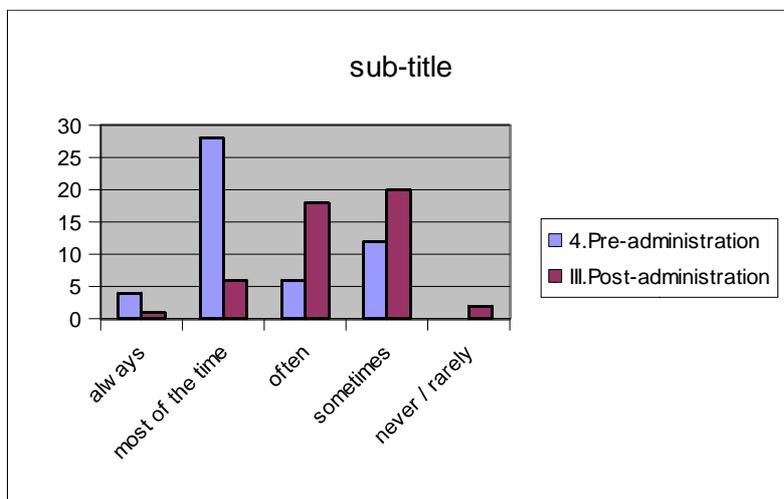
At the end of treatment, 37 patients (74%) had a score of less than or equal to 2, which would exclude them from the diagnostic criteria for IBS. The remaining 13 patients (26%) still had discomfort or pain for 2/3 days a month (8 patients) or for 1 day a week (5 patients).

The answers to the first question underline how treatment with *Kluyveromyces marxianus fragilis* B0399 drastically

reduces the symptomology with the exclusion of most of the patients from the diagnostic criteria for IBS.

The **second question** (Is this discomfort present just during menstruation?) The answers of all the women revealed an independence of menstruation from the symptomology of IBS both before and after treatment.

The **third question** (Have you been suffering from this discomfort or pain for 6 months or more?) (only pre-administration) showed that all the patients suffered from abdominal discomfort or pain for more than 6 months (chronic symptomology).

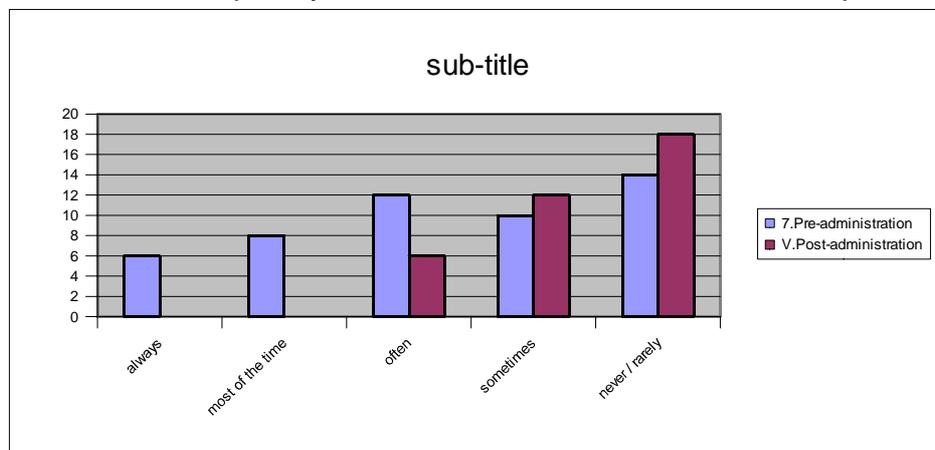


The **fourth question** (How often does this discomfort subside or disappear after defecation?) regarded the association between pain or discomfort and defecation. Initially, 28 patients (56%) reported an improvement after defecation. At the end, 20 patients (40%) reported an improvement in pain after defecation. This is due to the improvement of the overall symptomology and therefore less

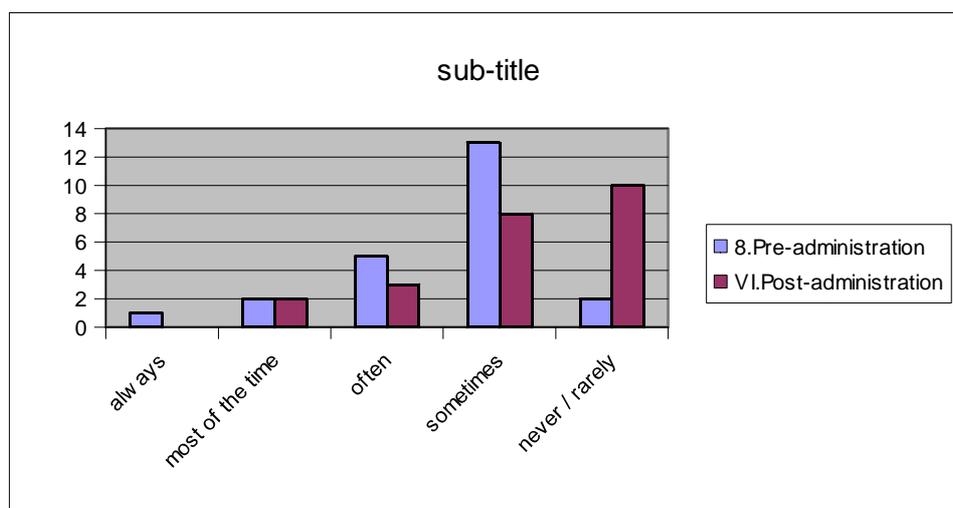
evidence of an association between pain – defecation.

The **fifth and sixth questions** (analysis of the frequency of defecation in relation to abdominal discomfort or pain.) compared the relation of pain with a change of intestinal cavity (more frequent or less frequent defecation). In the questionnaire post-administration, all the patients reported an improvement with 64% (32 patients) reporting a normalized intestinal cavity.

The **seventh question** (frequency of soft feces) analyzed the relationship between abdominal pain or discomfort and soft feces: In the first questionnaire, 14 patients reported having soft feces all the time or most of the time, while the other 22 had soft feces often or sometimes. After the treatment with *Kluyveromyces*, 18 patients (36%) didn't have soft feces and 12 patients had them just sometimes. A change from the answers that indicate an elevated frequency of soft feces to ones that describe sporadic episodes.



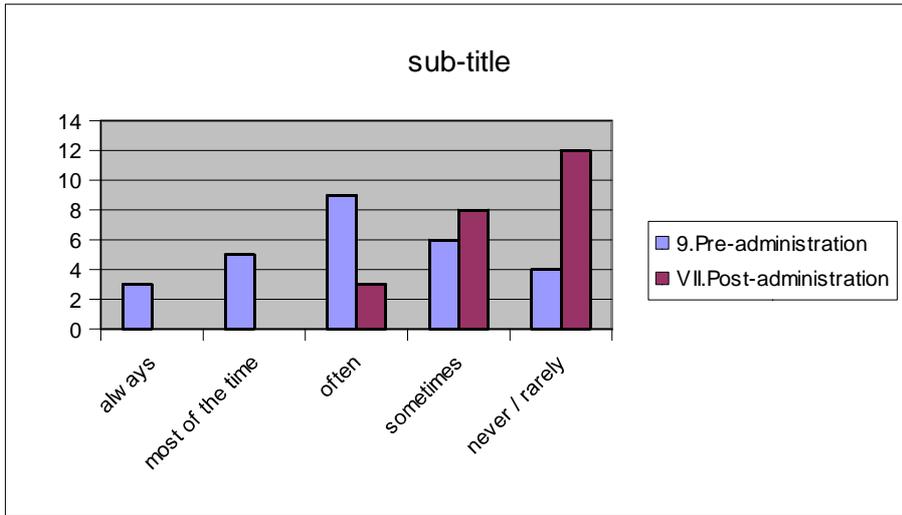
The **eighth question** looked into the relationship between pain and hard feces. This symptom was present in 23 patients (46%), 13 of which had the symptom just sometimes and 8 others often or always.



Dopo il trattamento le feci dure sono scomparse in 10 Pazienti e sono presenti in 8 solo a volte. After the treatment the hard feces disappeared in 10 patients and were present in 8 patients just sometimes. Even though in this case the statistical analysis doesn't show a

significant difference between the pre-administration answers and those post-administration, the graph representing the data shows a rather evident change in frequency, with a diminishing presence of hard feces.

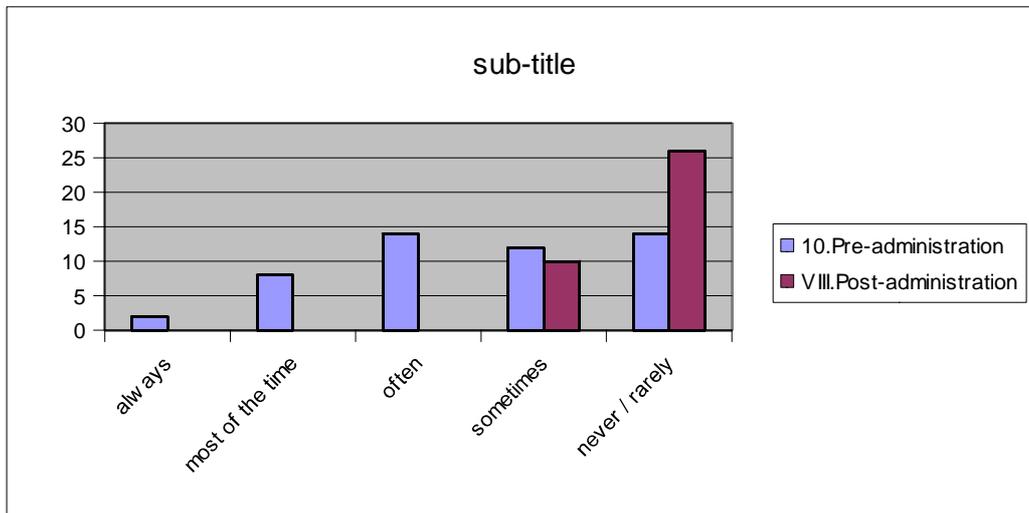
The **ninth question** (frequency of hard and lumpy feces) looked into the correlation between pain and hard and lumpy feces. In 9 patients (18%) the feces were often hard and in 8 they were hard most of the time or always.



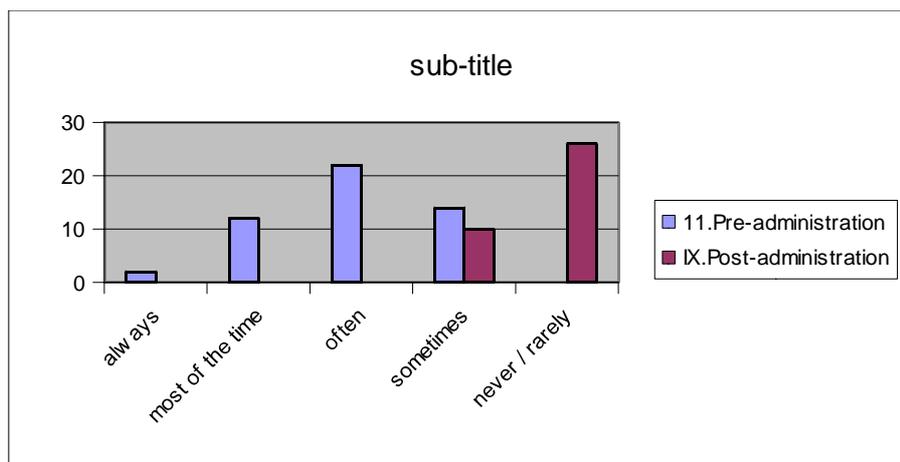
After the treatment, 12 patients reported not ever having hard feces and 8 only sometimes. The answers of the pre-administration test and post-administration test are significantly different, with a change in the answers that indicate an elevated frequency of soft feces to ones that describe sporadic episodes, indicating that the

treatment with *Kluyveromyces* diminishes the frequency of hard and lumpy feces.

In the **tenth question** (frequency of loose, soft or watery feces) the relationship between pain and loose and watery feces was investigated. 12 patients reported having this symptom sometimes while 22 patients reported having it most of the time or often. After treatment with *Kluyveromyces marxianus fragilis B0399*, 26 patients did not have watery feces any more and only 10 patients had them just sometimes. A considerably significant change in the answers from those that indicate an elevated frequency of soft feces to those that describe sporadic episodes, demonstrating that the appearance of loose or watery feces was diminished.



The **eleventh question** (How much does abdominal pain or discomfort influence social life?) looked into the relationship between IBS and quality of life.



The first questionnaire showed that 34 patients (68%) were conditioned often or every day by IBS and 14 patients were conditioned sometimes. After the treatment 40 patients (80%) reported being conditioned in their social life only sometimes.

A considerably significant change in the answers, from those that indicate a considerable discomfort to ones that describe a light or discomfort or none at all.

Beyond all the symptomatic improvement demonstrated by the above questions, this information leads to considering the importance that treatment with *Kluyveromyces marxianus fragilis* B0399 can have in mutating not only physical factors but psychological ones as well in patients with IBS.

#### 4- CONCLUSIONS:

Acknowledging the fact that IBS has multiple causes (physiological, psychological, environmental and behavioral) and therefore there is no single effective therapy but multiple therapies which are aimed at the most important subjective causes, this study, based on the symptomological data gathered before and after the treatment, demonstrates that the prolonged administration of *Kluyveromyces marxianus fragilis* B0399 significantly improves the clinical condition and above all improves the quality of life of the patients.

A correct diet, together with physical exercise and stress control, further improve the situation, giving the doctor the job of informing the patient, educating him and giving him confidence and then prescribing the most effective drug.

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