CHAPTER – 1

INTRODUCTION

1.1 Introduction

Ulcerative colitis is an inflammation of the lining of the large bowel (colon and rectum). Symptoms include rectal bleeding, diarrhea, abdominal cramps, weight loss, and fevers. It is a form of inflammatory bowel disease (IBD). The main symptom of active disease is usually constant diarrhea mixed with blood, of gradual onset. IBD is often confused with irritable bowel syndrome (IBS), a troublesome but much less serious condition. Ulcerative colitis is confirmed by examining the insides of the colon using sigmoidoscopy or colonoscopy. This also helps rule out Crohn’s disease and bowel cancers that may have similar symptoms. Ulcerative colitis has an incidence of 1 to 20 cases per 100,000 individuals per year, and a prevalence of 8 to 246 per 100,000 individuals. The disease is more prevalent in northern countries of the world, as well as in northern areas of individual countries or other regions. There is a presumed genetic component to susceptibility. The disease may be triggered in a susceptible person by environmental factors. Although dietary modification may reduce the discomfort of a person with the disease, ulcerative colitis is not thought to be caused by dietary factors.

In the present study, the researcher has selected a research topic “Effect of Omega 3 fatty acid, L-Glutamine and Probiotics on Ulcerative Colitis patients.” There are many other GI Disorders but, specifically the Ulcerative Colitis disease do not have any specific dietary remarks, also there are so many patients who are suffering from this disease who needs the actual dietary treatment along with medical treatment. The Doctor is the person who can only suggest the proper medicines for curing this disease but the dietitian can suggest proper diet to the patient which is the basic need of human being and as a patient it is a basic necessary to have knowledge about the food for this specific disease. There are many diet therapies are available to cure this disease. So, the researcher wants to see the effect of L-Glutamine supplements, Omega 3 fatty acid dietary supplements and Probiotics rich dietary supplement on ulcerative colitis patients.
For that, the researcher has taken 3 groups of ulcerative colitis patients. In which 1 is experimental group and second group is control group in which the researcher has taken all the patients of Ulcerative colitis for only medical treatment. Further, the researcher has made out the diet chart according to the 3 dietary treatment groups. Then the researcher has taken the follow up at every 15 days and after the continuation of the follow ups for all the 3 groups the researcher will come to find the result of each group at every follow up.

1.2 Statement of the problem

“Effect of Omega 3 fatty acid, L- Glutamine & Probiotics on Ulcerative Colitis Patients.”

In the present study, the researcher wants to do their experimental research about ulcerative colitis disease. The researcher has taken 3 groups as an experimental group 1. L-Glutamine dietary treatment group, 2. Omega 3 fatty acid dietary treatment group and 3 Probiotics dietary treatment group. The 4th group has taken as a control group and that is Medical treatment group. The researcher will take the case studies of the patients of Ulcerative Colitis disease and according to the history the researcher will plan a diet according to patient’s disease condition. The comparison among all the 3 different groups will be carried out and after the validation of the result; the data will be statistically analyzed and find out the conclusion.

1.3 Objectives of the study

1.3.1 L-Glutamine Dietary Treatment Group

1. L-Glutamine Dietary Treatment was targeted on 40 patients who were treated with medicines as well as L-Glutamine Diet Therapy.

2. There were 14 symptoms were presented in this disease. From the 1st day the patients were given L-Glutamine supplement of 30 gm/day.

3. The researcher observed that those patients who were taking 30 gm/day L-Glutamine supplements were getting recovered very fast.
4. From the 1st follow up there was blood, mucus presented in patient’s diarrhea. There was weight loss presented. Also there was nausea, vomiting and weakness was presented. These all symptoms were continued till 8th follow up.

5. Rest all the other symptoms were easily cured on 6th follow up.

6. At 10th follow up, all the symptoms got disappeared in all the 40th patients who were taking 30gm of L-Glutamine supplements every day.

7. Therefore, the researcher got their 1st result at 10th follow up from L-Glutamine dietary treatment group from their research.

1.3.2 Omega 3 fatty acid Dietary Treatment Group

1. Omega 3 fatty acid dietary treatment was targeted on 40 patients who were treated with medicines as well as omega 3 fatty acid diet therapy.

2. There were 14 symptoms were presented in this disease. From the 1st day the patients were given foods rich in omega 3 fatty acid was not more than 2 gm/day.

3. The researcher observed that those patients who were taking omega 3 fatty acid rich food group were getting recovered gradually.

4. From the 1st follow up. There was blood, mucus presented in the diarrhea. There was weight loss, nausea, vomiting presented also. These all symptoms were continued till 11th follow up.

5. Only the bloody diarrhea was continued at 11th follow up. Rest all the symptoms were disappeared. The bloody diarrhea was presented till 15th follow up.

6. At 16th follow up all the symptoms got disappeared in all the 40th patients who were taking foods rich in omega 3 fatty acid every day.

7. Therefore, the researcher got their 2nd result at 16th follow up from omega 3 fatty acid dietary treatment group from their research.
1.3.3 Probiotics Dietary Treatment Group

1. Probiotics dietary treatment was targeted on 40\textsuperscript{th} patients who were treated with medicines as well as Probiotics diet therapy.

2. There were 14 symptoms were presented in this disease. From the 1\textsuperscript{st} day, the patients were given Probiotics rich food every day.

3. The researcher observed that those patients who were taking Probiotics foods everyday were getting recovered slowly in compared with L-Glutamine and omega 3 fatty acid dietary treatment group.

4. From the 1\textsuperscript{st} follow up there were blood, mucus were presented in patient’s diarrhea. There was also weight loss presented. Also there were nausea, vomiting and weakness presented. These all symptoms were continued till 16\textsuperscript{th} follow up.

5. Rest all the other symptoms were cured at 16\textsuperscript{th} follow up. Only the bloody diarrhea was continued till 18\textsuperscript{th} follow up.

6. At 19\textsuperscript{th} follow up all the symptoms got disappeared in all the 40\textsuperscript{th} patients who were taking foods rich in Probiotics every day.

7. Therefore, the researcher got their 3\textsuperscript{rd} result at 19\textsuperscript{th} follow up from the Probiotics dietary treatment group from their research.

1.3.4 Medical Treatment Group

1. Medical treatment was targeted on 40 patients who were treated with only medicines and not by any of the diet therapy. This group was taken as control group.

2. There were all 14 symptoms were presented in this disease from the 1\textsuperscript{st} day of the follow up. The patients were given only medicines by the consultant.

3. The researcher observed that those patients who were taking only medicines which were prescribed by the physician were getting recovered very slowly in compared with all the other 3 groups.
4. from the 1st follow up there were blood and mucus presented in the diarrhea. There was also weight loss presented. There were also nausea, vomiting and weakness presented. These all symptoms were continued till 20th follow up.

5. Rest all the other symptoms were cured at 20th follow up. Only the bloody diarrhea was presented till 24th follow up.

6. At 25th follow up all the symptoms got cured and disappeared in all the 40th patients who were taking only medicines prescribed by the physician.

7. Therefore, the researcher got their 4th and last result at 25th follow up from medical treatment group from their research.

1.4 Key Words

In the present study there are 4 groups has been taken for the research. 1. Experimental Group and 2. Control group.

In Experimental group there are 3 groups has been taken.

1. L-Glutamine Dietary Treatment Group
2. Omega 3 fatty acid Dietary Treatment Group
3. Probiotics Dietary Treatment Group

In above all these groups, the patients of ulcerative colitis will be treated with medicines and above different dietary treatment.

In Control Group there is 1 group has been taken.

1.4.1 Medical Treatment

In the above group the patients of ulcerative colitis will be treated with only medicines. There will be no dietary treatment will be given to the patients of this group.

1.4.2 L-Glutamine: L-Glutamine is one of the most important nutrients for the intestine. L-Glutamine is the primary energy source for the immune system. It has the ability to “repair leaky gut syndrome” by maintaining the integrity of the bowels.
1.4.3 **Omega 3 fatty acid:** Omega 3 fatty acids appear to have anti-inflammatory properties and have been researched as a treatment for several conditions, including ulcerative colitis and crohn’s disease (IBD), hypertension and rheumatoid arthritis.

1.4.4 **Probiotics:** Probiotics bacteria can influence the activity of immune cells and the cells that line the intestines. Specifically, these friendly bacteria appear to block disease-causing bacteria from sticking to the lining of the intestines.

1.5 **Variables**

In the present study, there are 3 types of variables are present.

1. Independent Variable

2. Dependent variable and

3. Control variable.

1.5.1 **Independent Variables**

In Independent Variable there are 3 Groups comes as an Independent variable.

1. L-Glutamine Dietary Treatment Group
2. Omega 3 fatty acid Dietary Treatment Group
3. Probiotics Dietary Treatment Group

1.5.2 **Dependent Variables:**

In Dependent Variable there are points below which comes as a dependent variable.

1. Patient’s achievements in the disease condition.
2. Achievements in the different dietary treatment group
1.5.3 Control Variables:

In Control variable there are points below comes as a control variable.

1. Academic year- The research work has been started in the year 2011 and completed in the year 2013 so, the time limitations was of 3 years.
2. Dietary Treatment Group- There are so many other dietary treatments can be taken but due to time limitations the researcher has taken only 3 different types of dietary treatment group for their experimental research.
3. Area for the research- There is the limitation for selecting an area, the researcher has selected Wockhardt hospitals in Rajkot City. Which an esteemed hospital in Rajkot. As the researcher cannot go so far due to timings and other limited criteria. So, the researcher has selected their area of research in Rajkot City.

1.6 Hypothesis:

1. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in first follow ups.
2. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in second follow ups.
3. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in third follow ups.
4. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in Fourth follow ups.
5. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in fifth follow ups.

6. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in sixth follow ups.

7. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in seventh follow ups.

8. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in eighth follow ups.

9. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in ninth follow ups.

10. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in tenth follow ups.

11. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in eleventh follow ups.

12. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in twelfth follow ups.
13. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in thirteenth follow ups.

14. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in fourteenth follow ups.

15. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in fifteenth follow ups.

16. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in sixteenth follow ups.

17. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in seventeenth follow ups.

18. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in eighteenth follow ups.

19. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in nineteenth follow ups.

20. There is no significance difference among the different type of therapy (L-Glutamine Omega 3 fatty acids, Probiotics on Ulcerative Colitis Patients) wise patients in twentieth to twenty fifth follow ups.
1.7 **Types of Research**

In the present study, the type of research is concluding on the base of experiments. So, this research is an experimental based research.

1.8 **Area of Research**

In the present study, the researcher has chosen its area of research is based on medical field especially in hospital. So, the researcher will need to take their data from the hospital. So, the hospital is the only area from which the researcher can get their proper data collection for their research.

1.9 **Delimitations of the study**

In the present study, there are some delimitations of the research.

1. Like, area of research in which the researcher has selected Wockhardt hospitals, Rajkot. According to their convenience of travel, consumption of time.

2. As well as there are delimitations of sample size, due to the different type of dietary treatments has been selected.

3. There are so many other diseases of Gastro Intestinal tract are present. So, it is not possible to cover all the disease of GI tract for the research. So, due to the limitation of the academic year and time the researcher has taken only one disease for their research.

1.10 **Significance of the Study**

The study on this topic can be very useful in super specialty or multi specialty hospitals, educational institutes, research Laboratories in the society/community, research institutes etc. Upcoming researchers or students who want to continue further can help them out by studying more on this subject.

Right now, in the society or community there is a major mass of normal public. They don’t even know the role of diet in gastroenterological disorders. They are
unaware of the proper nutritional guidance. So, these people can make them aware by finding out by performing research of this kind.

2 Also, this research can be used to guide NGO’s (Non-Government Organizations) who help patients by going to rural areas and educating them in this field. These NGO’s can be guided by researchers as to how to go about educating the patients who are situated in rural areas to ensure their betterment.

3 Due to unhygienic drinking water in rural areas we find many kinds of GI disorders. Especially in rural women and children in monsoon season, so, the morbidity ratio is high in this society. This needs find outs of the cause and treatment.

4 Also, due to unhygienic sewage water plant, the vegetables are also contaminated with this plant and consumed by the peoples who cause many serious GI disorders.