

Comparing the Results from Faecal Microbiome Transplantation (FMT) and Gut Flora Replacement Therapy (GFRT) using 16s Mrna Microbiome Mapping

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Abstract

We compared the results from 10 randomly chosen FMT patients and 10 randomly chosen patients using GFRT. We used 16S mRNA microbiome mapping on all of these patients. We identified that GFRT is just as effective as FMT, a great deal safer and is a necessary step to protect patients from catching COVID-19.

Keywords: Faecal Microbiome Transplantation (FMT); Gut Flora Replacement Therapy (GFRT); COVID-19; 16s mRNA microbiome mapping

Introduction

We have previously used FMT, this is well researched [1] and there has been significant success in difficult to treat conditions [2].

With the advent of the pandemic, we had to reconsider our use of donor derived laboratory processed implants because of the potential transmission of COVID-19 from exposure to such implants [3-5]

What we also noted is that the now standard use of measurements in sewage water waste by water authorities, measuring the levels of COVID-19 in the sewage effluent has proven to be a reliable indicator of the prevalence of local outbreaks and indeed, this level of COVID-19 in the sewage effluent pre-dates the onset of an outbreak of COVID-19 locally [6].

We have seen many claims of patients catching COVID-19 from the stool of COVID-19 sufferers, these notifications seem to be increasingly common, but in practice they are not provable. The presence of large amounts of COVID-19 in faecal matter raises the possibility that part of the explanation as to why COVID-19 is so contagious in nursing homes and in cohabiting multigenerational large families, lies in this reason.

We therefore worked out a strategy of implanting approved probiotics into the colon using our standard protocol which we used with FMT and we call this Gut Flora Replacement Therapy (GFRT). To our knowledge, this is the first time this approach has been used, but we note that Colonic Hydrotherapists regularly advertise this approach as part of their offering, but use very small amounts of implanted probiotics for

a limited number of occasions. There are no published papers that can be found on this approach used by Colonic Hydrotherapists.

Every patient in this study signed an informed consent to allow us to use their information on an anonymous basis. Every patient also had a Microbiome Mapping test before and after treatment.[7-9]

This study is observational and retrospective.

Materials and Methods

We start off the protocol with colonic hydrotherapy and then we do ten daily implants, five days one week, five days the next, of various bacteria outlined in Table 1.

We use a Woods Gravity Feed tank, using a closed system, and in order to administer the FMT or the GFRT we use a 40cm rectal catheter, inserted to 33 cm.

We used 16S mRNA Microbiome Mapping on all of these patients [7-9]

Results

We used the data from 10 randomly chosen patients from our cohort of FMT patients and the same for 10 randomly chosen patients who had received GFRT.

We measured their microbiomes using 16S mRNA tests, the results are shown in Tables 3 and 4. The reference values for the laboratory were used for these tests are obtained from a specially selected verified subset of user's data containing hundreds of samples which were identified as coming from healthy donors. The 16S mRNA test done on each patient before and after treatment showed no significant difference between the FMT and the GFRT groups.

Table 1: List of bacterial species used in Gut Flora Replacement.

Day 1	
<u>Optibac 'Every Day'</u>	<ul style="list-style-type: none"> <u>Lactobacillus rhamnosus rosell</u> <u>Lactobacillus acidophilus rosell</u> <u>Bifidobacterium longum rosell</u> <u>Lactobacillus lactic rosell</u> <u>Bifidum breve rosell</u>
<u>Bimuno</u>	
Butyric Acid	

Day 2	
<u>Optibac 'Extra Strength'</u>	<ul style="list-style-type: none"> <u>Lactobacillus acidophilus NCFM</u> <u>Lactobacillus paracasei lpc</u> <u>Bifidolactic bi – 07</u> <u>Bifidolactic bi -04</u>
<u>Bimuno</u>	
Butyric Acid	

Day 3	
<u>Optibac for Women/Men</u>	<ul style="list-style-type: none"> <u>Lactobacillus rhamnosus gr – 1</u> <u>Lactobacillus reuteri rc-14</u>
<u>Bimuno</u>	
Butyric Acid	

Day 4	
<u>Optibac Saccharomyces Boulardii</u>	<ul style="list-style-type: none"> <u>Saccharomyces boulardii</u>
<u>Bimuno</u>	
Butyric Acid	

Day 5	
<u>Symprove</u>	<ul style="list-style-type: none"> <u>Lactobacillus rhamnosus, Eubacterium faecium</u> <u>Lactobacillus plantarum</u> <u>Lactobacillus acidophilus</u>
<u>Bimuno</u>	
Butyric Acid	
<p><u>Bimuno is a galacto oligosaccharide in powder form to encourage the growth of bifidobacterial.</u></p>	

We used approved probiotic preparations as outlined in Table 2:

Table 2: Protocol for Gut Flora Replacement Therapy.

<p>Day 1: <u>Optibac</u> for every day, 15 capsules <u>Bimuno</u>, 1 sachet <u>Biocare</u> Butyric Acid, 10 capsules All together in 40-50ml of saline, put into the gut with saline using a rectal catheter.</p>
<p>Day 2: <u>Optibac</u> Extra Strength, 15 capsules <u>Bimuno</u>, 1 sachet Butyric Acid, 10 capsules Prepared in the same way as Day 1.</p>
<p>Day 3: <u>Optibac</u> for women 15 capsules <u>Bimuno</u>, 1 sachet Butyric Acid 10 capsules Implanted as above.</p>
<p>Day 4: <u>Optibac</u> <u>Saccharomyces Boulardii</u> 8 capsules <u>Bimuno</u>, 1 sachet Butyric Acid, 10 capsules Implanted as above.</p>
<p>Day 5: <u>Symprove</u> 50ml <u>Bimuno</u>, 1 sachet Butyric Acid, 10 capsules Implanted as above.</p>
<p>Days 6,7,8,9, and 10. Repeat as days 1, 2, 3, 4 and 5.</p>

Conclusion

We have clearly demonstrated here that GFRT is a safe and effective alternative to FMT, which now carries significant risk due to the COVID-19 pandemic.

The next step forward would be a randomised control study

comparing FMT to GFRT for c-difficile. The evidence for FMT being effective in c-difficile is well established [10].

The results of the 16s mRNA test before and after each treatment showed no significant difference between the FMT and GFRT groups.

Table 3: Faecal Microbiome Transplantation (FMT) Diversity, Probiotics, Fibre and Butyrate Ideal result for all of these is 8 or above.

F M T No.	Age	Gender	16S mRNA test results before FMT treatment		Pathogenic Bacteria (Y/N)	16S mRNA test results after FMT treatment		Pathogenic Bacteria (Y/N)	Complaint	Clinical Response (Y/N)	
			Diversity	Probiotics		Diversity	Probiotics				
FMT1	67	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Breast Cancer	N	
			Fibre	8			Fibre				4
			Butyrate	7			Butyrate				7
				6							8
FMT2	68	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	IBS	Y	
			Fibre	5			Fibre				8
			Butyrate	4			Butyrate				7
				6							9
FMT3	76	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Chronic Fatigue Syndrome	Y	
			Fibre	5			Fibre				8
			Butyrate	9			Butyrate				8
				7							9
FMT4	68	Male	Diversity	Probiotics	N	Diversity	Probiotics	N	Obesity	Y	
			Fibre	4			Fibre				8
			Butyrate	4			Butyrate				7
				7							9
FMT5	56	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Cancer	Y	
			Fibre	4			Fibre				6
			Butyrate	6			Butyrate				7
				6							8
FMT6	21	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Acne	Y	
			Fibre	4			Fibre				7
			Butyrate	4			Butyrate				8
				8							8
FMT7	63	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Chronic Fatigue Syndrome	Y	
			Fibre	5			Fibre				8
			Butyrate	4			Butyrate				9
				6							6
FMT8	60	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Irritable Bowel Syndrome	Y	
			Fibre	5			Fibre				8
			Butyrate	6			Butyrate				7
				6							7
FMT9	71	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Chronic Fatigue Syndrome	Y	
			Fibre	7			Fibre				8
			Butyrate	8			Butyrate				4
				7							5
FMT10	51	Female	Diversity	Probiotics	N	Diversity	Probiotics	N	Cancer	Y	
			Fibre	6			Fibre				9
			Butyrate	4			Butyrate				7
				9							6

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Table 4: Gut Flora Replacement Therapy (GFRT) Diversity, Probiotics, Fibre and Butyrate – Ideal result for all of these is 8 or above.

GFRT No.	Age	Gender	16S mRNA test results before GFRT treatment		Pathogenic Bacteria (Y/N)	16S mRNA test results after GFRT treatment		Pathogenic Bacteria (Y/N)	Complaint	Clinical Response (Y/N)
			Diversity			Diversity				
GFRT 1	65	Female	Diversity	4	Y	Diversity	4	N	Irritable Bowel Syndrome	Y
			Probiotics	3			6			
			Fibre	7			7			
			Butyrate	4			4			
GFRT 2	19	Female	Diversity	5	N	Diversity	6	N	Chronic Fatigue Syndrome	Y
			Probiotics	6			8			
			Fibre	8			8			
			Butyrate	6			9			
GFRT 3	50	Female	Diversity	5	Y	Diversity	7	N	Irritable Bowel and Chronic Fatigue Syndrome	Y
			Probiotics	8			8			
			Fibre	4			6			
			Butyrate	4			8			
GFRT 4	51	Female	Diversity	4	N	Diversity	6	N	Chronic Fatigue Syndrome	Y
			Probiotics	4			6			
			Fibre	5			5			
			Butyrate	8			8			
GFRT 5	36	Male	Diversity	4	N	Diversity	4	N	Crohns Disease	Y
			Probiotics	6			6			
			Fibre	8			8			
			Butyrate	5			6			
GFRT 6	75	Male	Diversity	7	N	Diversity	9	N	Colorectal Cancer	Y
			Probiotics	9			10			
			Fibre	7			5			
			Butyrate	7			7			
GFRT 7	68	Male	Diversity	4	N	Diversity	8	N	Irritable Bowel Syndrome	Y
			Probiotics	7			8			
			Fibre	5			5			
			Butyrate	4			4			
GFRT 8	78	Male	Diversity	3	Y	Diversity	4	N	Colorectal Cancer	Y
			Probiotics	3			4			
			Fibre	7			7			
			Butyrate	4			8			
GFRT 9	58	Female	Diversity	4	N	Diversity	8	N	Ulcerative Colitis	Y
			Probiotics	5			7			
			Fibre	6			6			
			Butyrate	7			8			
GFRT 10	56	Female	Diversity	5	N	Diversity	8	N	Irritable Bowel Syndrome	Y
			Probiotics	4			8			
			Fibre	7			6			
			Butyrate	8			4			

Pathogen Identification in the Clinical Laboratory

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