Adherence to Fasting Diet and Mediterranean Diet protocol in women with early breast cancer receiving chemotherapy: a randomized clinical trial

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Abstract

Background: Different types of fasting diet protocols have been associated with a protective effect towards chemotherapy side effects and patients' quality of life. No previous studies have explored the effectiveness of an intervention combining fasting diet and a Mediterranean-type diet in breast cancer patients.

Study design: In this randomized clinical trial, 33 newly diagnosed women with early breast cancer were enrolled; Group A (n=16) received a 60 hours fasting diet (36 hours before and 24 hours after chemotherapy) and then guided to follow Mediterranean diet between the chemotherapy cycles, whereas Group B (n=17) received standard of care and no specific diet recommendation. The mean age of Group A and Group B was 45,56±8,23 and 47,35±10,08, respectively. Adherence to Mediterranean diet was assessed by MedDietScore. For each chemotherapy cycle participants used a scale to self-report their adherence to fasting-diet or Mediterranean diet (range 1-10, 1 lower and 10 higher).

Results: In total, 30.3% (n=10) of the participants received 4 chemotherapies, 66,67% (n=12) received 6 chemotherapies and 33.33% (n=11) received 8 chemotherapies, with no differences between Groups. At baseline, MedDietScore for Group A was 31.47±4.42 and for Group B was 27.93±8.52 (p=0.163). In subgroup analysis for the first four cycles of chemotherapy mean adherence to fasting diet was 8.43/10, whereas adherence to the Mediterranean Diet was 7.79/10.

Conclusions: This is the first study reporting data from breast cancer patients following a fasting diet in combination with the Mediterranean Diet. Adherence to both the fasting regimen and the Mediterranean diet was high, indicating that this combined approach is feasible for use in cancer clinical trials. However, its effectiveness in reducing side effects and improving quality of life remains to be established.

Introduction

Fasting mimicking diet protocols have been associated with lower incidence of chemotherapy side effects and better quality of life in cancer patients. Taking under consideration the higher rates of women diagnosed with early breast cancer receiving chemotherapy and the positive effect of Mediterranean Diet on health and disease we examined the impact of the implementation of a combined protocol including fasting diet and Mediterranean- type diet in breast cancer patients.

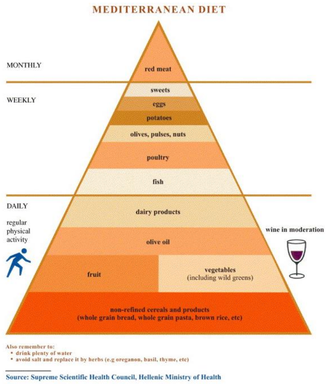


Table 1
The Mediterranean Diet Score

How often do you consume	Frequency of consumption (servings/week or otherwise stated)						
Non-refined cereals (whole grain bread, pasta, rice, etc)	Never	1–6	7–12	13–18	19–31	>32	
	0	1	2	3	4	5	
Potatoes	Never	1–4	5–8	9–12	13–18	>18	
	0	1	2	3	4	5	
Fruits	Never	1–4	5–8	9–15	16–21	>22	
	0	1	2	3	4	5	
Vegetables	Never	1–6	7–12	13–20	21–32	>33	
	0	1	2	3	4	5	
Legumes	Never	<1	1–2	3–4	5–6	>6	
	0	1	2	3	4	5	
Fish	Never	<1	1–2	3–4	5–6	>6	
	0	1	2	3	4	5	
Red meat and products	≤1	2–3	4–5	6–7	8–10	>10	
	5	4	3	2	1	0	
Poultry	≤3	4–5	5–6	7–8	9–10	>10	
	5	4	3	2	1	0	
Full fat dairy products (cheese, yoghurt, milk)	≤10	11–15	16–20	21–28	29–30	>30	
	5	4	3	2	1	0	
Use of olive oil in cooking (times/week)	Never	Rare	<1	1–3	3–5	Daily	
	0	1	2	3	4	5	
Alcoholic beverages (ml/day, 100 ml=12 g ethanol)	<300	300	400	500	600	>700 or 0	
	5	4	3	2	1	0	

Methods and Materials

In this randomized clinical trial, 33 newly diagnosed women with early breast cancer were enrolled; Group A (n=16) received a 60 hours fasting diet (36 hours before and 24 hours after chemotherapy) and then guided to follow Mediterranean diet between the chemotherapy cycles, whereas Group B (n=17) received standard of care and no specific diet recommendation. The mean age of Group A and Group B was 45,56±8,23 and 47,35±10,08, respectively. Adherence to Mediterranean diet was assessed by MedDietScore. For each chemotherapy cycle participants were using a self-reported scale to access adherence to fasting-diet or Mediterranean diet (range 1-10, 1 lower and 10 higher) (Table 2).

Table2. Group age, baseline adherence to MD, adherence to fasting diet and to MD during chemotherapy .

	Group A (intervention group) N=16	Group B (control group) N=17	P-value
Age	45.56±8.23	47.35±10.08	>0.05
MedDietScore baseline	31.47±4.42	27.93±8.52	0.163
Adherence to fasting diet	8.43/10	-	
Adherence to MD	7.79/10	-	

Results

In total 30.3% (n=10) of the participants received 4 chemotherapies, 66,67% (n=12) received 6 chemotherapies and 33.33% (n=11) received 8 chemotherapies, with no differences between Groups. At baseline, MedDietScore for Group A was 31.47±4.42 and for Group B was 27.93±8.52 (p=0.163). In subgroup analysis for the first four cycles of chemotherapy mean adherence to fasting diet was 8.43/10, whereas adherence to the Mediterranean Diet was 7.79/10 (Table 2).

Discussion

Adherence to the 60h fasting diet protocol was high, 8.43/10 and there were no reports of any side effects. Group A patients had a high adherence to the Mediterranean Diet in the time between chemotherapy cycles, 7.79/10. As far to our knowledge, these is the first study combining fasting diet and Mediterranean diet in the same group of patients, as well as reporting the level of adherence to them.

Conclusions

This is the first study reporting data from breast cancer patients following a fasting diet in combination with the Mediterranean Diet. Adherence to both the fasting regimen and the Mediterranean diet was high, indicating that this combined approach is feasible for use in cancer clinical trials. However, its effectiveness in reducing side effects and improving quality of life remains to be established.

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