Role of alternative medicine in myocardial infarction and ischemia-reperfusion.

By Dr. Subhan Elahi, Dr M. Hassaan Khalid

Abstract

Alternative medicines are vital in numerous sectors of global healthcare, including cardiovascular disease (CVD) treatment. This study investigates the role of alternative medicine (probiotic treatment) as an adjuvant source to lowering cholesterol and blood pressure in myocardial infarction (MI) and ischemia-reperfusion (IR) patients. The MI (n=100) and IR (n=100) were enrolled in this study from different private hospital sectors. The instructions were given to every patient of MI and IR to take a probiotic-rich diet for one month at least. Before and after probiotic-rich diet treatment, the data were analyzed by using SPSS-20 version software. Results showed a significant decrease in cholesterol and blood pressure after a probiotics-rich diet compared to before treatment. The study revealed the critical role of alternative probiotic treatment as an additional source in improving cardiovascular disease. However, large-scale studies are required to confirm and correlate with other disease risk factors.

Introduction:

Myocardial infarction (MI) and ischemia-reperfusion (IR) are the two significant disorders of cardiovascular disease (CVD), which is the leading cause of death for both men and women all over the world [1-2]. Different studies have been done on biologically alternative treatment, music therapy, and herbal therapy to rule out the risk factors and mediation or modulation of different types of cardiovascular disease etiology. Myocardial infarction and ischemia-reperfusion are the two significant disorders of cardiovascular disease. Both MI and IR are caused by nearly the same risk factors, which include high blood pressure, high levels of LDL cholesterol, smoking, diabetes, being overweight or obese, having a poor diet, not being physically active enough, and drinking too much alcohol. Patients seeking therapy for MI and IR in cardiovascular health were more interested in alternative treatment due to the development in some emerging countries. Numerous clinical trials have been conducted up to this point on biologically based treatment, mind-body therapies, manipulative and body-based therapies, complete medical systems, and energy medicine. These therapies are being studied in great detail in terms of alternative treatment of MI and IR patients and mediation or modulation of the etiology of cardiovascular disease [3]. Probiotics are live bacteria or yeast found in fermented dairy products and some medications. After consumption, they show a broad range of health advantages, including improved lactose tolerance and digestion, boosted immune function, and cancer prevention. The improvement of lipid metabolism and blood
pressure (BP) profile, two potent independent cardiovascular risk factors, has been extensively investigated in the literature. The study on dietary practices and cholesterolemia in the African Masaai is the first to demonstrate probiotic efficacy in decreasing blood cholesterol [4].

**Objectives**
The main objective of this study was to determine the role of probiotics as an alternative treatment for one month in MI and IR patients. All patients were requested to continue their allopathic medication.

**Methodology**

**Study Design:** This is a survey-based observational study. About 100 of each MI and IR patient were enrolled in this study. Following informed consent, all patients were divided according to their respective groups’ clinical features of MI and IR. The data were collected before the probiotics-rich diet. After instructing patients to take additional probiotics for the next month, we compared MI and IR patients before and after probiotics. The study included the patients (men and women) diagnosed with MI and IR, patients undergoing treatment of each diagnosis at a time, and patients with adequate follow-up data, were included in this study. However, patients who did not undergo follow-up and treatment, smokers with any addiction, and patients under 50 years were excluded.

**Disease information:** Regarding cardiovascular disease, specifically myocardial infarction, and ischemia-reperfusion, the data collected included the date at diagnosis, stage at diagnosis, mode of diagnosis, and subsequent treatment of patients.

**Medical History:** Medical records of the patient’s initial evaluation were reviewed to determine eligibility. A detailed review of medical records was conducted once a patient was deemed eligible for the study. The data collected included patients’ ages, demographics, blood pressure, and presentation history.

**Laboratory data:** These cholesterol data were collected from the patients for the initial evaluation and then recorded again from the same patients after one month.

**Statistical analysis:** Statistical analyses were performed through SPSS-20 software. The results were analyzed through dependent t-test analysis, and the alpha value of \( p \leq 0.05 \) was considered significant. The age was calculated as mean \( \pm \) SD.

**Results**
The results showed a significant effect of probiotic therapy among patients with MI and IR. The cholesterol level was decreased before treatment (MI+T+RAM) and (IR+T+RAM) as compared to (MI+RAM) and (IR+RAM) patients after treatment. The age was calculated in years. There was statistical significance in clinical characteristics and laboratory findings. Before and after probiotics as an alternative treatment comparison showed significant
improvement in systolic blood pressure (mmHg), Diastolic blood pressure (mmHg), and cholesterol (mg/dl) in ischemia-reperfusion patients and myocardial reperfusion patients.

Table 1: Comparison of clinical characteristics and cholesterol of myocardial patients with before and after probiotics as an alternative treatment. Values are presented as mean±SD (n=100). Data were analyzed by dependent t-test. *p<0.05 as compared to MI+RM. MI+alternative treatment+routine allopathic medication (MI+T+RAM) and MI+routine allopathic medications (MI+RAM).

<table>
<thead>
<tr>
<th>Variables</th>
<th>MI+RAM (n=100)</th>
<th>MI+T+RAM (n=100)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean (SD)</td>
<td>55.7 (0.4)</td>
<td>57.2 (0.94)*</td>
<td>-</td>
</tr>
<tr>
<td>Systolic blood pressure, mmHg, mean (SD)</td>
<td>144.1 (2.1)</td>
<td>135.6 (2.16)*</td>
<td>&lt;0.050</td>
</tr>
<tr>
<td>Diastolic blood pressure, mmHg, mean (SD)</td>
<td>85.3 (1.12)</td>
<td>80.6 (1.09)*</td>
<td>0.043</td>
</tr>
<tr>
<td>Total cholesterol, mg/dl, mean (SD)</td>
<td>256.7 (4.07)</td>
<td>247.0 (4.0)*</td>
<td>0.048</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variables</th>
<th>IR+RAM (n=100)</th>
<th>IR+T+RAM (n=100)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, years, mean (SD)</td>
<td>56.3(0.98)</td>
<td>53.8 (0.10)</td>
<td>-</td>
</tr>
<tr>
<td>Systolic blood pressure SBP, mmHg, mean (SD)</td>
<td>145.4 (2.32)</td>
<td>139.4 (2.01)</td>
<td>&lt;0.050</td>
</tr>
<tr>
<td>Diastolic blood pressure DBP, mmHg, mean (SD)</td>
<td>90.6 (1.2)</td>
<td>86.7 (1.8)</td>
<td>0.03</td>
</tr>
<tr>
<td>Total cholesterol, mg/dl, mean (SD)</td>
<td>254.3(4.2)</td>
<td>241.2 (4.14)</td>
<td>0.02</td>
</tr>
</tbody>
</table>
Table 1: Comparison of clinical characteristics and cholesterol of myocardial patients with before and after probiotics as an alternative treatment. Values are presented as mean±SD (n=100). Data were analyzed by dependent t-test. *p<0.05 as compared to IR+RM. Ischemia-reperfusion + alternative treatment + routine allopathic medication (IR+T+RAM) and Ischemia reperfusion + routine allopathic medication (IR+RAM).

Discussion
Several of these alternative treatments claim cardiovascular effects; however, the vast majority of research on them is either ambiguous, contradictory, or reveals no benefit from their use. Negative and positive outcomes must be reported for the legitimate and rigorous study of alternative medicine to advance, and this highlights the need for higher-quality research in this area [5, 6]. This observational study investigated alternative medicine's relationship between MI and IR patients. The study reveals the significant effect of probiotics therapy before and after one month. The study also confirmed the effect on systolic and diastolic blood pressure in the comparison. The participants were requested for the probiotic in the diet with routine allopathic medication showed sustainability in their blood pressure as shown in Tables 1 and 2 [3, 6].

The study revealed the role of alternative medicine in acting on lipid disposition, specifically probiotics. It is tough to demonstrate the effectiveness of probiotics in lowering blood lipids because results are consistent with the idea that some probiotics affect cholesterol depending on the bacterial genus, species, or strain [7-8]. This action is reportedly partly attributed to Lactobacilli with bile salt hydrolase (BSH) activity, according to in vivo experiments on animals [9-10]. It has been demonstrated that these BSH bacilli cause bile acids to deconjugate.

The deconjugated bile acids are quickly removed through feces, increasing the need for cholesterol to generate bile acids from scratch. The most significant causes of cholesterol excretion in feces are the synthesis and removal of bile acids [11-12].

On the other hand, cholesterol is scarcely absorbable when bile salts are deconjugated. Probiotics have also been studied for lowering blood pressure. Recent studies have shown that taking several probiotic species for longer than eight weeks can lower both systolic and diastolic blood pressure, especially in people with high baseline blood pressure [4, 13].

Limitations
The lack of a healthy age-and sex-matched cohort to compare with healthy patients was the primary limitation of this investigation. The limitation of the study is the unavailability of a clinical trial study setup, so the patients were randomly selected with limited findings. The
study would be done on a large scale to understand better the mechanism and relation of myocardial infarction and ischemic reperfusion with the role of probiotics.

Conclusion
In this study, the role of probiotics-based alternative treatment as an additional source of lowering cholesterol levels and blood pressure levels as alternative medicine amongst patients with CVD, specifically myocardial infarction and ischemia-reperfusion. This analysis demonstrates the need for additional research to understand the precise physiologic effects and long-term benefits of probiotic use on cardiovascular morbidity and mortality, as well as more open communication between patients and physicians regarding alternative medicine as an adjuvant use. However, large-scale studies are required to confirm and correlate with other risk factors for the disease.

References:


10.1093/ndt/17.11.1909.