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A pilot trial of Saudi honey on oral mucositis among pediatric cancer patients

Soad K Al Jaouni¹, Mohammad S Al Muhayawi¹, Abear Hussein¹, Iman Elfiki¹ and SteveHarekeh² ¹King Abdul-Aziz University Hospital, KSA ²King Fahd Medical Research Center, KSA

Objective: This study was to evaluate the efficacy and safety of Saudi honey as integrative approach in prophylaxis and treatment of chemo-radiotherapy induced mucositis among pediatric cancer patients at King Abdul-Aziz University Hospital at King Abdul-Aziz University during October 2004 to October 2005. **Patients & Methods:** Forty patients were randomized into two groups: receiving chemo/radiotherapy with the additional Saudi honey and control group receiving treatment without the use of honey. All patients were evaluated clinically, mouth ulcers were evaluated. Cultures were done. **Results:** A total of 390 episodes of fever & neutropenia associated with mucositis. The honey group experienced significant reduction in grade IV mucositis 15 out of 200 febrile neutropenia episodes and grade III mucositis was reported in 20 out of 190 febrile neutropenia episodes. In the control group, grade III& IV mucositis were reported in 60 and 40 out of 200 febrile neutropenia. Candida colonization was found in 15 per cent of the honey group and 60 per cent of the control group. Positive cultures for aerobic pathogenic bacteria were observed in 20 per cent of the honey group and 65 per cent of the control group. The honey group had a positive weight gain, and decreased duration of hospitalization and severity of mucositis with a significant decrease in bacterial and fungal infection. (p=0.001). **Conclusion:** This study showed that the honey treatment is effective and safe in reducing and minimizing the damage of the mucosa, improving the quality of life. Honey inhibits and minimizes bacterial and fungal growth. We recommend using honey as a standard supportive care in the pediatric cancer patients.

dr.jaouni@gmail.com

Novel methodology of detecting minimal residual disease in acute leukemia by using FTIR spectroscopy

Soad K Al Jaouni King Abdulaziz University Hospital, KSA

Background: Previously examined the potential of conventional Fourier transform infrared spectroscopy (FTIR) in an attempt to detect specific biomarkers for discrimination between disease free and acute leukemia bone marrow samples.

Aim: To assess the efficacy in detecting minimal residual disease in acute leukemia by FTIR.

Patient and Methods: Case report, to predict early relapse, and distinguish disease free in remission (control) bone marrow samples, four bone marrow samples were obtained from an 11-year-old boy diagnosed as acute leukemia. Samples (1) and (2) for the patient in remission as diagnosed clinically and laboratory examination free, sample (3) diagnosed relapse in CNS, while sample (4) was taken post-chemotherapy induction.

Result: The results revealed that characteristic band alterations arising from cellular protein, lipid, and DNA were identified in both control and diseased samples (relapse of ALL). There were specific changes that affected the secondary structure of proteins and appeared in the FTIR spectra confirmed with the second-derivative analysis. The overall protein structure in the control sample consisted primarily of a-helices, whereas in relapse ALL sample, it had a relatively high proportion of anti-parallel b-sheet protein constituents presumably due to leukemia. Different absorbance ratios for specific bands were calculated and plotted versus the patient's samples in different time intervals. There are significant fluctuations in the ratios under investigation, which can be attributed to the changes in the biomolecular structure between the control and relapsed samples. These ratios are all yield statistically significant differences in parameters that it can be used as an early predictor of minimal residual disease (MRD) in acute leukemia.

Conclusions: Fourier transform infrared spectroscopy is an effective method in detecting minimal residual disease in acute leukemia. Further larger samples is indicated.

dr.jaouni@gmail.com