

## Title: Biochemical monitoring of bone sarcomas Patients Infected with COVID-19 Pandemic

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Statement of the Problem: In both preclinical and clinical settings, histological images are now digitalized into high resolution images. Big data sets of images seek digital tools for fast and precise analysis and diagnosis. Machine learning (ML)-based software are commonly used for various images analysis: detection, segmentation and classification. Here, we describe advantages and disadvantages of ML-supervised based digital histopathology image tools based on the literature review.

Review-based observations: ML-based software can significantly reduced image analysis time and inter-operator variability. However, we and other have experienced some limitations. Supervised ML is strongly encouraged for homogeneous staining quantifications, in which the pathologist can control the learning phase and choose appropriate input and output data (quality control). Subsequent, ML algorithms need to be well trained on a large amount of high-quality labeled images, to accurately segment and classify each image. The chosen images should include enough diversity to be representative of the entire dataset.

In addition, the choice of ML-algorithm is fundamental, and it reflects the complexity of the desired histological analysis. If a complex analysis is needed, more complex ML-based tools should be applied. For example, for simple staining quantification ML-FIBER is considered as easy-to use, fast and reproducible but lack of complex analysis and it requires specific image formats as input. Other software must be considered to quantify the image features. For instance, Ilastik software uses a random

forest classifier in the learning step, which helps to characterize by a set of generic (nonlinear) features (color and texture) and it supports up to three spatial plus one spectral dimension, calculating all dimensions in the feature analysis. Additionally, higher image processing can require deep neural networks in order to extract higher-level features from the raw input (used for cell characterization).

## Title: Effect of Spiritual Care on Pain of Breast Cancer Patients: A Clinical Trial

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**Introduction:** One of the most important symptoms and complication of breast cancer is pain with an extensive impact on life dimensions, management of which requires comprehensive nursing care and interventions. Given that spiritual care is an essential and unique part of care and spirituality is an indispensable part of man's life, we aimed to determine the effect of spiritual care in breast cancer patients from a multidimensional viewpoint. This clinical trial was conducted on breast cancer patients who presented to two medical centers at Isfahan, Iran, during 2014. Fifty patients were randomly selected and assigned to intervention and control groups for the intervention group, the spiritual care program was implemented in groups of five in ten 60-minute-long sessions. Both groups completed the multidimensional pain inventory (MPI), which is a self-report questionnaire, immediately before and six weeks after the intervention. To analyze the data, descriptive statistics analysis of covariance and Chi-squared test were performed in SPSS, version 18.

**Results:** After administering the spiritual care program in the intervention group, the mean scores of pain severity dimensions ( $p=0.004$ ), disrupted daily activity ( $p<0.001$ ) emotional disturbance ( $p<0.001$ ), and negative reaction ( $p<0.001$ ) decreased significantly. Analysis of covariance indicated significant differences between the intervention and control group in terms of pain severity ( $p<0.012$ ), disrupted daily activity ( $p<0.001$ ), life control ( $p=0.021$ ), emotional distress ( $p<0.001$ ), and negative reaction ( $p=0.004$ ).

**Conclusion:** Spiritual care is effective on the reduction of pain severity and its adverse effects on the lives of breast cancer patients. Therefore, it is suggested to be used as a non-pharmaceutical complementary treatment for pain relief.

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### Biography

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## Title: The Impact of COVID 19 to Develop Acute Lymphocytic Leukemia Among Iraqi Patients

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The present study aims to evaluate of COVID 19 (COV19) virus on developing acute lymphocytic leukemia (ALL) among Iraqi patients after recovering from a severe infection from the coronavirus epidemic. One hundred and fifty severely infected people with coronavirus included in this case control study, thirteen of them developed ALL after recovering from COV19 infection, in addition to healthy people (control group) who did not have COV19 infection until the time of the study. The present study was approved by the local ethics committee. All persons participated in this study was agreed to participate and signed an informed consent. The period of this study extended from October 2020 to October 2021. This work was done in the Department of Biochemistry, College of Medicine University of Babylon, The Oncology Center at Marjan Teaching Hospital and the intensive care ward at Hilla Republican Hospital in Hilla City, Iraq. All cases of COV19 were previously diagnosed by swabs (polymerase chain reaction), ALL cases were previously diagnosed by bone marrow biopsy. Various circulating biomarkers were investigated including hematological, hepatic and renal profiles as well as oxidative stress markers, electrolytes and vitamins C and E.

Results show that vitamin E was found to be decreased in patients with ALL ( $P < 0.01$ ). Malondialdehyde (MDA) levels were very high in ALL ( $ALL-B = 8.69 \pm 1.59$ ) compared to controls ( $1.22 \pm 0.10$ ;  $P < 0.001$ ) while the levels of antioxidants [superoxide dismutase (SOD), glutathione peroxidase (GPx), reduced glutathione (GSH), catalase (CAT)], platelets, as well as electrolytes (Ca

and Mg) were reduced in patients suffering from ALL. Enhanced levels of oxidative stress (MDA) and decreased levels of enzymatic and non-enzymatic antioxidants reflect the pathological state and impaired cell control in patients suffering from ALL and show a strong correlation with oxidative stress, indicating that patients' biological systems are under oxidative stress.

### Biography

Mufeed Ewadh currently works at the Clinical biochemistry, University of Babylon. Mufeed does research in Biochemistry. Their most recent publication is 'ESTIMATE GSH-PX AND GST IN BENZENE TREATED MICE'.