TWELFTH INTERNATIONAL MEDICAL CONGRESS

Migration of Young Doctors
The Continuous Medical Education of Doctors

6 – 10 September 2023
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SEGMENTATION OF LUNG RADIOGRAPHY OF A PRETERM INFANT WITH RESPIRATORY DISTRESS SYNDROME

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The aim of this work is to analyze the visualization of respiratory distress in a preterm infant by segmenting the radiographic image of the lungs. In the study, the radiograph of a preterm infant at the 27th week of gestation was processed, who was diagnosed with respiratory distress syndrome grade IV according to Bomsell. Visualization of respiratory distress of a preterm infant was performed by segmentation of the radiographic image of the lungs within the MATLAB programmable environment. Before the segmentation procedure, the radiographic image was pre-processed (noise removal, edge enhancement). Extraction of the expanded part of the lung parenchyma was performed using active contours, and the reliability of the algorithm was evaluated through the analysis of the parameters of the confusion matrix and the Dice coefficient. The results show the visualization of the unaffected (expanded) lung region, as well as the automatic identification of the region. Performance evaluation parameters show

satisfactory accuracy and are above 0.85. Analysis of the segmentation of radiographic images of a preterm infant with respiratory distress syndrome can have a significant contribution in the process of diagnosis of respiratory distress syndrome as well as in the evaluation of patients after the therapy.

HUMAN PAPILLOMAVIRUS INFECTION AND INFERTILITY

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Infertility, defined as the inability to conceive after a year of regular sexual intercourse without using contraceptives, affects 8–12% of reproductive-aged couples worldwide. It is three times more prevalent in low and middle income countries compared with the global average, most likely due to high unsafe abortion rates and poor maternal care that increases the risk of post-abortion and post-partum infections, as well as secondary infertility. Nevertheless, infertility rates are increasing worldwide year on year, which apart from affecting the quality of life and psychological status of patients is contributing to significant economic burden. Therefore, it is essential to analyze the etiology of infertility, in order to devise effective preventive measures.

Sexually transmitted infections are a major cause of infertility. In fact, 20–60% of female infertility cases are caused by sexually transmitted infections, which can