



Analysis Of WBC's, RBC,s Platelets And Detect The Blood Cancer Using Deep Learning

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Abstract - Medical Image Processing plays an essential part in the detection of disease. Leukemia is a kind of blood cancer that happens due to irregular or immature White Blood Cell (WBC) s. In general, WBC is the fighter to fight against infectious cells in the human body. Abnormal growth of WBC from bone marrow will destroy the other cells and affect bone marrow and lymphatic tissues. These cells do not function properly and leads to leukemia.

Index Terms – Red Blood cells(RBCs), White Blood Cell(WBCs), platelets, Leukemia, Image Processing(IP)

I. INTRODUCTION (HEADING 1)

Blood cells are generated from the stem cell which is present in the bone marrow. Generally, Blood is made up of 55% of plasma and 45% components of red blood cells (which carries oxygen and brings back carbon dioxide away from tissues), WBC(which fights against infection) and blood platelets (prevents clotting of blood and controls bleeding). In the Human body system, the cells grow and multiply afterwards the old cells get destroyed and the new cell takes its place. But in cancer the old cells do not die, so the new cells do not get enough places to live which affect the functioning of the blood marrow which results in the increasing number of damaged white blood cells that are immature cells that destroy other cells and affect the body's ability to fight against the infection. .These immature cells are known as leukemia cells.

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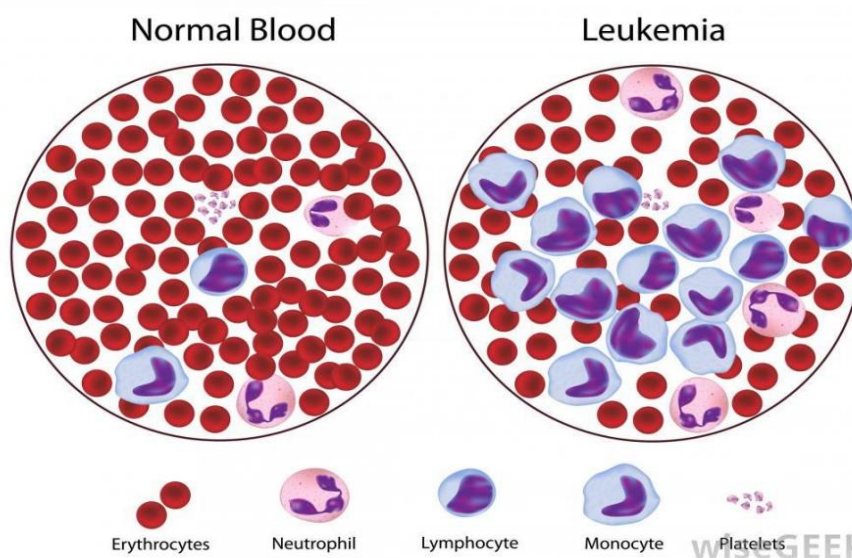


Fig.1 Normal blood cell and Leukemia

II. LITERATURE SURVEY

This review study presents a comprehensive and systematic view of the status of all published ML-based leukemia detection and classification models that process PBS images. The average accuracy of the ML methods applied in PBS image analysis to detect leukemia was >97%, indicating that the use of ML could lead to extraordinary outcomes in leukemia detection from PBS images. Among all ML techniques, deep learning (DL) achieved higher precision and sensitivity in detecting different cases of leukemia, compared to its precedents. ML has many applications in analyzing different types of leukemia images, but the use of ML algorithms to detect acute lymphoblastic leukemia (ALL) has attracted the greatest attention in the fields of hematology and artificial intelligence. Conclusion. Using the ML method to process leukemia smear images can improve accuracy, reduce diagnosis time, and provide faster, cheaper, and safer diagnostic services. In addition to the current diagnostic methods, clinical and laboratory experts can also adopt ML methods in laboratory applications and tool

Leukemia is a type of cancer which affects the white blood cells. Blood consists of plasma, and three different types of cells (White Blood Cells, Red Blood Cells and Platelets) and each of these performs particular task. White blood cells help the body to fight against infection and diseases. Red blood cells carry oxygen from the lungs to the body's tissues and vice versa. Platelets help to form blood clots and control bleeding. A body of the person who is suffering from leukemia produces too many blood cells of particular type than another which results in abnormalities in the cells. These abnormal cells look different than normal blood cells and do not function properly (usually white blood cells). They also interfere with other blood cells, usually red blood cells and platelets. Two types of abnormal white blood cells can turn into leukemia: lymphoid cells and myeloid cells. When leukemia caused due to lymphoid cells is called lymphocytic or lymphoblastic leukemia and if it is found in the myeloid cells, it is called myelogenous or myeloid leukemia

III. CONCLUSIONS

The purpose of this paper was to implement image processing techniques in deciding presence of leukemia in white blood cell images. Image segmentation of various leukemia types such as Acute Lymphocytic Leukemia (ALL), Chronic Lymphocytic Leukemia (CLL) are covered using MATLAB which is 91 accurate. Image processing technique for leukemia diagnosis is time saving and cheaper as compare to the old laboratory testing method.

IV. REFERENCES

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