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DETERMINATION OF NUTRITIONAL STATUS WITH DARKFIELD MICROSCOPY LIVE BLOOD ANALYSIS

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Abstract

Determination of nutritional status of one person from only one drop live blood for short period of time is method of live blood analysis. Life blood analysis uses a drop of native blood from the person's finger and then viewed under a compound microscope using Darfield condenser. Under a Darkfield microscope, the blood is stained with light frequencies rather than chemicals, so the blood remains alive and active, allowing the viewer to see live red blood cells, white blood cells moving, also platelets, crystal formations in plasma, blood proteins (fibrinogen strands), bacterial forms, fungal forms and other toxins.

This paper presents results from analysis method with Darkfield microscopy of native blood of two persons. One with Diabetes Mellitus type2 (Case 1), with insulin therapy and the second person is a Sportswoman (Case 2), who is casein intolerant, and have fatigue symptoms.

The results for investigated cases are following: In case 1 was found: erythrocytes aggregation, fibrinogen strands in plasma, plasma colloids and symplasts with toxins from the environment, food or undigested food particles, cholesterol crystal formations, poor digestion. In case 2 were found: erythrocytes in rouleaux with rare acanthocytes, dehydration and oxidative stress. We also found decreased number of neutrophils that are hyper segmented, eosinophils appeared very bright and shiny. And there were also pseudo crystals from undigested proteins.

This visual method allows the nutritionist and the client to see the blood in its living form. Seeing their own blood live is a confirmation and a realization that the choices they make in everyday diet impact in maintaining their homeostasis. Live blood microscopy is a powerful tool for nutritionists to recommend adequate food intake and diet protocol for every individual.

***Key words**: Live blood, Microscopy, Darkfield, Nutrition, Evaluation, Deficiencies, Food, Diet.*

1. Introduction

The technique of examining live blood under the microscope began in the early 1900s with pioneering work of Prof. Gunther Enderlien in Germany. From that time this discipline has advanced and today is used mostly for determination the nutritional status of population, no matter of age and gender.

Live blood analysis uses a drop of live blood from the patient's finger and then viewed under a compound microscope using a Dark field condenser. Today's conventional methods of blood analysis use chemical stains that helps to color certain morphologies in the blood and make them visible, but at the same time it kills most of what is alive in the blood. More sophisticated methods of analysis which allow very high magnifications into the hundreds of thousands is electron microscopy, but again this also kills the blood morphologies.

Under a dark field microscope, the blood is stained with light frequencies rather than chemicals, so the blood remains alive and active, allowing the viewer to see blood cells moving under the microscope, and different formation in plasma as it would behave in the body. All this would not be visible under a bright field microscope, or where the blood has been fixed by stains and other chemical agents.

This is visual method as it allows the practitioner and the patient to see the blood in its native form. Great aspect of the method is in the power of the picture. Seeing their own blood live on the computer monitor is a confirmation of the dynamic life processes going on within themselves and a realization that the choices they make in nutrition and lifestyle make impact the vitality of their body fluid, their blood. The analysis must be done quickly, the examination lasts no more than 20 minutes, because many of the live blood features will degrade after that time.

The examination of live blood is valuable for determination of nutrition status, and it can verify many nutritional

deficiencies. Also this method give light to the internal status like: presence of toxins, acidic or alkaline environment, digestive capacity, deficiency of iron, folic acid, fatty acids and others, as well as possibility to see parasites and worms [2].

There are many things that practitioner can determine from viewing live blood. Observations are made on variations in size, shape, ratios and fine structure of red cells, white cells, platelets and other structures in plasma. Observations can infer [2]:

- Nutrition deficiency determined by the shape and size of the erythrocytes.
- Liver and pancreas stress.
- Lacking vitamins and minerals.
- Gut permeability and digestive health (there are often undigested fats and proteins visible).
- Intestinal bacteria overgrowth / leaky gut syndrome.
- Free radical load.
- Immune surveillance and activity, the viability of the white blood cells.
- Crystal shapes and accumulation of toxins from environment, food or undigested food particles.
- Fungal presence / possible parasites.

Often things are noticed that are never seen using traditional methods of blood screening. In itself, live blood screening with microscopy is not a diagnostic procedure.

Once the various parameters are collated, then the recommendation can be made to rectify what is presently imbalanced, for example, condition present may require taking more water, adding fatty acids, some vitamins, and digestive enzymes. So, a specific individual nutritional protocol can be made, or restriction of specific foods, that can help to strengthen and support most advantageous body functioning and maintain optimal nutritional status and health.

Usually, when patients apply the recommended diet and behavioral modifications, control analysis after 40 days shows a positive change. That way the patient will begin to understand how their lifestyle can contribute on cellular level and what the effects that nutrition plays are in overall health of the body.

2. Materials and Methods

The materials that were used (native blood) were taken from two persons. One with Diabetes Mellitus Type 2 with insulin therapy (Case 1) and the other a sportswoman with casein intolerance and fatigue symptoms (Case 2). Their diagnoses and therapy were given by their personal doctors, previous of the live blood analysis. These persons were chosen to perform live blood analysis on them due to the broad range of symptoms.

The basic steps that were taken for obtaining the native blood samples are:

- An explanation to the patient of how the blood sample is obtained and what will be shown on the screen.
- The Patients ring or middle finger is chosen, and cleaned with an alcohol swab. It is important to allow the alcohol to dry before performing the finger puncture so as not to alter the consistency of the blood and invalidate the demonstration.
- The figure is gently gasped and using the puncture device as a sterile lancet, the skin is pierced once so a drop of blood is expressed. The drop is touched very lightly with the slide, being careful not to touch the finger. Immediately a cover slip is placed over the drop of blood on the slide. It's important to avoid applying too much pressure to the cover slip, because this could traumatize the blood sample.
- Then the patient is given sterile gauze to hold and pad tightly over the puncture site to stop the bleeding.
- The slide is placed on the microscope platform to start the analysis.

To determinate nutritional status of patients with this method dark field microscope is used. The analysis was done quickly, no more than 20 minutes, because many of the live blood's features will degrade after that time. The first observation is done on the red cells, their shape and size. After that the white blood cells were examined, as well as the plasma, and other structures found in the native blood.

3. Results and Discussion

This paper presents results from analysis method with dark field microscopy of native blood of two persons. One with Diabetes Mellitus Type 2 (Case 1), with insulin therapy and the second person is sportswoman (Case 2), who is casein intolerant, and have fatigue symptoms.

3.1 Results

Case 1

Erythrocytes are in aggregation, fibrinogen strands appear in the plasma. Colloids and symlasts are with accumulated toxins from environment, food or undigested food particles, and are visible cholesterol crystal formations, and clearly shown poor digestion, as shown in the Figure 1. In Figure 2 fibrinogen strains are shown and RBC aggregation [1].

After 40 days control analysis has been taken (shown in the Figure 3). With adequate diet protocol which is recommended, significant changes are shown. Erythrocytes aggregation is decreased, although they are not completely free. The hydration of the body is increased.

There are still fibrinogen strands in the blood sample but they are not in aggregation. There is significant decrease of cholesterol crystals. Rare symplast and metabolic waste is noticed [1]. The glucose level in the blood is normalized. Given recommendations about food intake must be follow up further.

Case 2

Erythrocytes are in rouleau, with rare acathoycytes as a result from dehydration and oxidative stress. Decreased numbers of neutrophils that are hyper segmented, eosinophils appear very bright and shiny. Pseudo crystals are seen from undigested proteins. (Shown in Figure 4)

After 40 days control the analysis has shown quick and positive changes (Figure 5). There are no rouleau formations. Plasma is clean as it should be without any metabolic waste. Hydration is good. There are still increased numbers of eosinophils, but the hyper segmentation of neutrophils is decreased and they have good granular activity. Digestion of proteins is better [1].

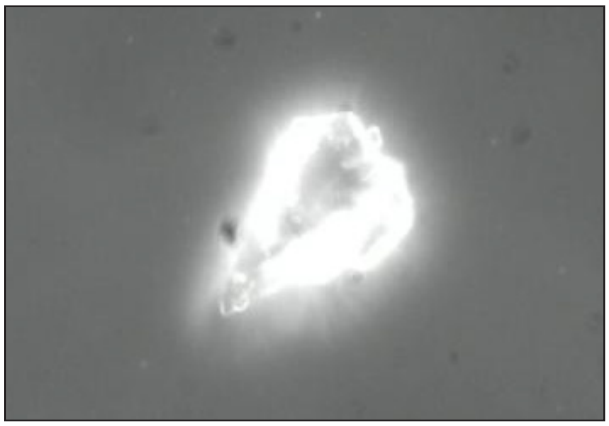

Figure 1. Dark field analysis Case 1: Cholesterol crystal (left) (Photo: Nadica Ilievska)

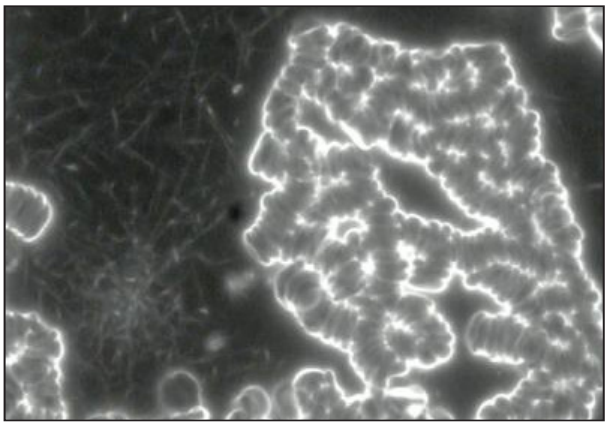

Figure 2. RBC aggregation, fibrinogen strands (Photo: Nadica Ilievska)

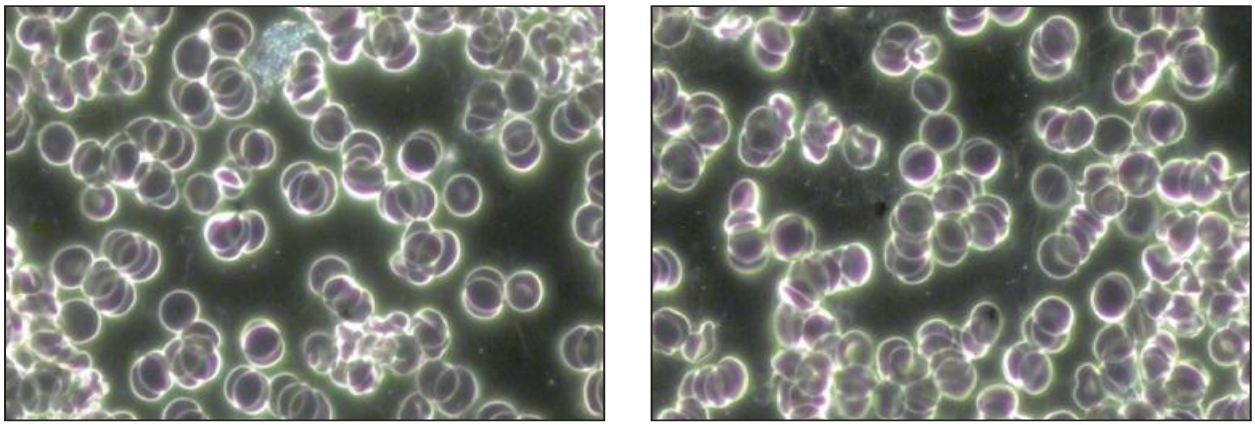

Figure 3. Case 1: Decreased RBC aggregation and cholesterol crystals, increased hydration. (Photos: Nadica Ilievska)

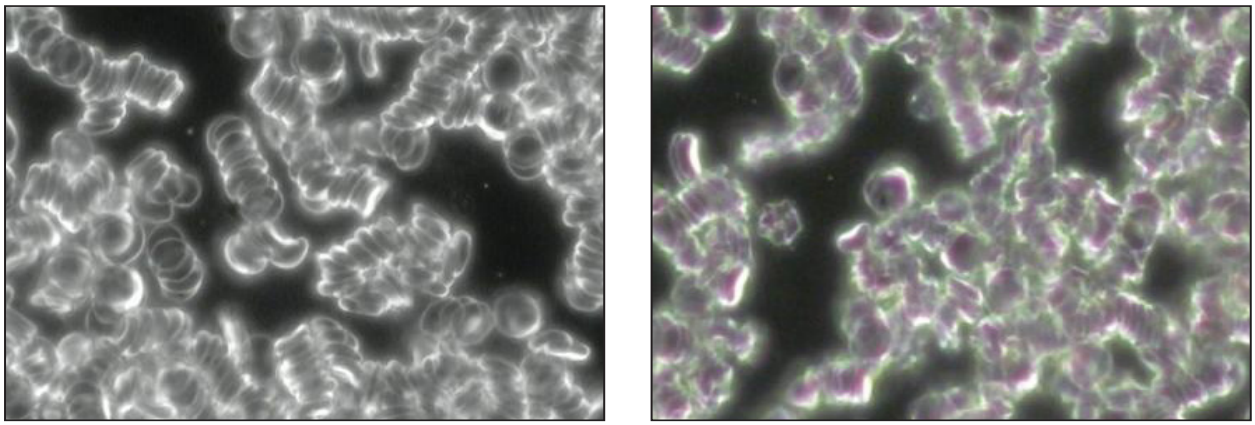

Figure 4. Dark field analysis Case 2 (Photos: Nadica Ilievska)

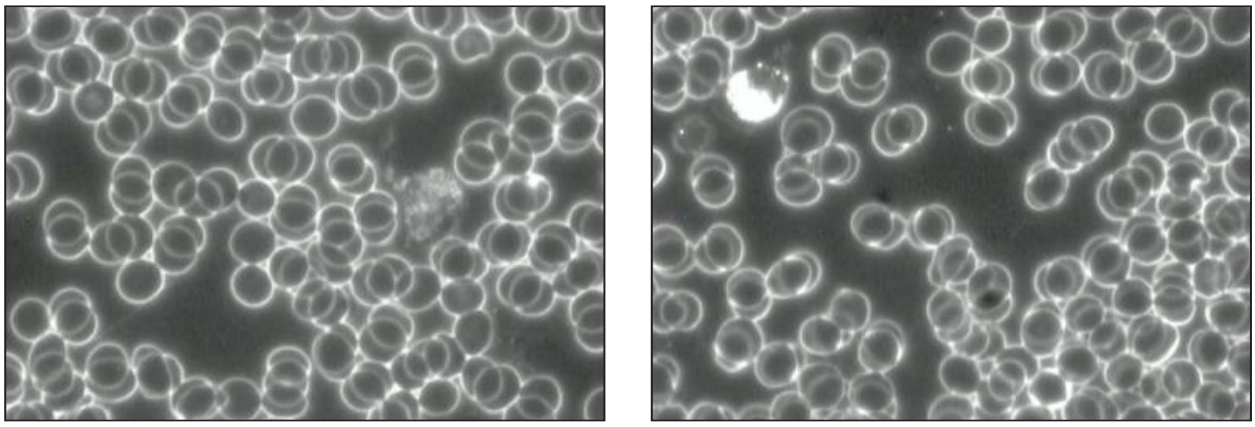

Figure 5. Case 2: No rouleau formations, clean plasma and good hydration (Photos: Nadica Ilievska)

3.2 Discussion

In a healthy, well balanced individual with adequate nutrition, with no enzyme deficiencies and also without physical stress caused by acting free radicals the erythrocytes should be free flowing within the black-colored liquid-plasma. It is neither clumped nor stacked and it has correct number, sizes and types of form. Leukocytes are shiny and with good granular activity, as it's shown in the Figure 6.

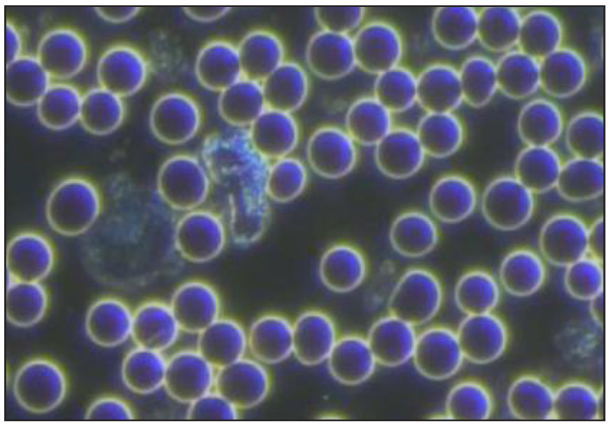

Figure 6. Normal healthy blood (homeostasis) (Photo: Nadica Ilievska)

Case 1: Person with Diabetes Mellitus Type 2

There was appearance of erythrocyte aggregation. Knowing that each red cell has a positive charge and requires being in a negatively charged surrounding. When this is beautifully balanced then the zeta potential is correct. In this case they reflect a loss of 'electrical charge' which causes them to stick together. Cells find it more difficult to transfer oxygen to tissues and to circulate freely. Cause: too much cooked animal protein in diet, low digestive capacity, consumption of processed foods and minerals may be off. High inflammation marker suspected. Fibrin formations can be related to joint problems. Denotes liver stress and is associated with toxic bowel. Their appearance is always due to an excess of colloids in the blood. The present cholesterol crystals in a live blood sample may indicate improper fat digestion. It would be responsible to assume that if these crystals are visible in the blood, there may be further build-up of fatty deposits on the arterial walls.

After determination of nutrition status with Dark field Microscopy Analysis - DFM the individual diet protocol was recommended, and the results after control analysis were good. The person cut blood sugar fluctuations, feel more vibrant and with stamina. Erythrocytes aggregation is decreased, although they are not completely free. Hydration is increased. There are still fibrinogen strands in the blood sample but they are not in aggregation. There is significant decrease of cholesterol crystals. Rare symplast and metabolic waste is noticed. Given recommendations about food intake must be follow up further.

Case 2: Sportswoman, casein intolerant

The sportswoman has casein intolerance, and has fatigue symptoms. DFM analysis determine appearance of erythrocyte rouleau, it is an indication of incomplete protein digestion-poor assimilation. It is related to imbalanced electrostatic properties, excess dietary protein, eating too much dairy protein. There may be excess protein and lactic acid on the erythrocyte membrane. Altered blood pH is suspected. Dehydration, not drinking enough water is one of the undiagnosed causes of fatigue. In the sample there are acanthocytes which are red blood cells with an irregular pattern of coarse projections along the outer surface of the cell membrane. They are result of oxidative stress and free radical damage caused by nutritional deficiencies from malnutrition or poor diet. They accompany vitamin C deficiency, folic acid, B-complex and vitamin E deficiency, also some minerals like Potassium, Magnesium and Calcium. Appearance of hyper segmented neutrophils have five or more lobes of nuclei are often seen in cases of anemia, indicating B-12/folic acid deficiencies,

poor digestion (lack of digestive enzymes) and low friendly intestinal bacteria. Appearance of eosinophils, which are granular leucocytes with a nucleus that usually has two distinct lobes. The cytoplasm contains course round granules of uniform size located around the outer edge. The granules are highly refractive and phagocytic. Cause of increased numbers of eosinophils are allergies. In the blood sample there are pseudo crystals from undigested proteins that indicate inadequate protein food consumption and very low raw vegetables intake.

After determination of nutrition status with Dark field Microscopy Analysis - DFM the individual diet protocol was recommended, control analysis has shown quick and positive changes. There are no rouleau formations. Plasma is clean as it should be without any metabolic waste. Hydration is good. There are still increased numbers of eosinophils, but the hyper segmentation of neutrophils is decreased and they have good granular activity. Digestion of proteins is better.

4. Conclusions

- There are many methods for determination the nutritional status of one person. All of them give good results when they are used by skilled nutritionists.

- Live blood analysis uses a drop of live blood from the patient's finger and then viewed under a compound microscope using a dark field condenser. Under a dark field microscope, the blood is stained with light frequencies, so the blood remains alive and active. This is visual method as it allows the practitioner and the patient to see the blood in its living form, which provides a really fascinating sight every time you view it. Patients are often fascinated by what they see on the screen and usually begin asking questions immediately. There is no doubt in anyone's mind that when you see a blood sample under a dark field microscope that you will never forget it. Patient remain present during the analysis.

- The examination of live blood is valuable for determination the nutritional status as it determine many nutritional deficiencies and gives the fractioned excellent indicators to the status of the internal milieu - like toxicity, acidic or alkaline environment, digestive capacity, nutritional deficiencies such as Iron, Folic acid, antioxidants, or dehydration of the body.

- After the correct implementation of the individual dietary changes given after the live blood analysis the patients overall health was better and they felt satisfied with the results.

- The most important thing for one nutritionist is that we can use all the information to structure extremely specific nutritional protocols. It is very important that with control analysis to track its effectiveness because is very significant to confirm the internal effects of recommended diet treatment.

5. References

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