

INTERPRETATION OF RESULTS - Linkor

1. Inflammatory Indexes : definition and calculations

The indexes quantify the balance between inflammation and the immune response (innate and adaptive). As the inflammatory level increases, the immune level deteriorates.

They are calculated from the blood count (CBC) :

Neutrophils, lymphocytes, monocytes and blood platelets, expressed in Giga/L.

SII = Systemic Immune Inflammation Index : $\text{Neutrophils} \times \text{Platelets} / \text{Lymphocytes}$

It measures the inflammatory level and should ideally be below 520.

SIRI = Systemic Immune Response Index : $\text{Neutrophils} \times \text{Monocytes} / \text{Lymphocytes}$

It measures the level of the immune response and should ideally be lower than 1,1.

In case of high indexes:

High indexes reflect a degraded terrain and therefore a higher risk of complication or failure.

Very low indexes can indicate a failure of the immune system (with higher lymphocytes).

In case of abnormal indexes, it's more prudent to postpone the surgery, and improve the health first.

2. Interrogation to be conducted in case of high indexes

• Eliminate a false positive:

- A recent infectious episode :

After an infectious or flu episode, neutrophils and lymphocytes remain high for a few weeks.

→ Transitory increase of indexes.

- A recent surgical intervention : inflammation is mandatory after surgery.

→ Systematic increase of post-operative indexes.

- An allergic ground : allergy increases the level of inflammation.

• General condition :

- Tobacco : Active smoking (> 10 cig/day) increases the level of neutrophils.

- Unbalanced diabetes : induces inflammation and therefore increased indexes.

• Oral condition :

A very degraded periodontal state or an apical infection increase the level of neutrophils.

• Drug prescriptions :

- Some treatments interfere with NFS:

IV lipid emulsions, cephalosporins, chemo/biotherapies or contrast products.

- Corticosteroids : increase the level of neutrophils.

- Immunosuppressants : lower the level of lymphocytes.

- Anticoagulants : can modify platelet levels.

- Lithium/drugs of the nervous system : increases the platelet rate.

• Nutrition :

- Industrial food & ultra-processed foods :

These foods undergo important processes (chemical, physical, biological) and contain modified industrial ingredients (hydrogenated oils, glucose-fructose syrup, modified starches)

→ Destruction of the intestinal microbiota → Inflammation → Increased indexes.

- A lot of red meat = source of cholesterol.

- Alcohol = increase in cholesterol and triglycerides.

- Slow transit, irritable bowel syndrome = witness of a disturbed intestinal flora

• Physical activity :

Walking is the only activity that stimulates the immune system and reduces inflammation.

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If the cause of the high indexes is identified during the consultation:

Treating the cause + advice for the patient

If the cause is not identified:

Refer the patient to his attending physician for a complete biological assessment in the laboratory.

Postpone any surgery until the etiology is established and treated.

3. Advice for patients

- **Rigorous oral hygiene**

+/- periodontal treatment if indicated. Avoid chlorexidine.

- **Smoking cessation**

After smoking cessation, normalization of neutrophils begins from *4 weeks*.

Impact is measurable on the indexes after *3 months* and on healing after *6 months*.

- **Healthy and balanced diet**

- Ensure sufficient protein intake.
- Fruits and vegetables : source of fiber and vitamins
- Cruciferous (cauliflower, broccoli, red cabbage/Brussels, radish, turnip, arugula, watercress)
- Sources of tryptophan (turkey, eggs, pumpkin seeds, tofu, lentils, nuts)
- Sources of prebiotics (garlic, onion, leek, jerusalem artichoke, asparagus, banana)
- Sources of probiotics (yogurts and fermented foods)

- **Intermittent fasting**

16h fasting (deleting breakfast or dinner).

Fasting improves immunity by helping cells detoxify.

It also reduces its caloric intake, often too important for actual energy expenditure.

- **Antioxidant cure**

Antioxidants exert a powerful anti-inflammatory action, improving immunity.

Most powerful antioxidant : Vitamin D (ideal blood level: 40-70ng/mL in pre-op.)

Other interesting antioxidants :

- Vitamins C/A/E/K2/B6
- Zinc, melatonin, magnésium, copper
- Omega 3 & 6
- Probiotics (Lactobacillus and Bifidobacterium ++)
- Glutamine

- **Physical exercise**

Interests of walking: causes the influx of stem cells into the blood :

Stem cells have a powerful anti-inflammatory effect → Improved immunity.

Advise a daily, fast walk, of at least 30 minutes.

After applying these tips, the indexes should improve from 6-8 weeks

If the indexes remain high despite the elimination of all causes :

Refer the patient to his attending physician for a complete assessment.

Postpone any intervention until the etiology is established and treated.

More information and videos on www.immunec.com