

INTEGRATIVE IMMUNOLOGICAL APPROACH IN A CHILD WITH ALOPECIA AREATA UNIVERSALIS AND EBV REACTIVATION: A CASE REPORT.

DR ZENIA FLORES DE APODACA *

*Physician specialist in microbiology and in family and community medicine. Master in control and application of intrahospital antibiotic therapy. Master in regenerative and anti-aging medicine. Expert in nutrition and dietetics, integrative medicine. Fellow and active member of AEMI (Spanish Association of Micro-immunotherapy). info@clinicafloresdeapodaca.com

Introduction

Alopecia universalis is the extreme form of alopecia areata⁴, which is considered an autoimmune disease and has been linked to atopy, stress, nutrient deficiencies, or chronic viral infections^{3,5}.

This case report aims to emphasize the importance of a comprehensive evaluation in the diagnostic process of pediatric alopecia universalis, including medical history, evaluation of immune status, and detection of latent infections such as Epstein-Barr virus (EBV)².

1 Patient case

December 2021

6 year-old male patient suffers from alopecia areata episode progressing to alopecia universalis in 15 days.

- Initially tested for celiac disease, tuberculosis and autoimmune thyroiditis, with no relevant findings; diagnosed with alopecia universalis with parapsoriasis.

- Initial treatment with oral corticosteroids and biotin leads to worsening symptoms¹:

- Erythematous, scaly, pruritic lesions on trunk and limbs.

- 3 months into treatment: occasional bloating, semi-soft yellowish stools.

- 6 months into treatment: parents decide to discontinue treatment with corticosteroids and use pharmaceutical ointments for the skin lesions. The treating dermatologist proposed treatment with JAK inhibitors, which is declined by the parents.

October 2022

Child comes to consultation with his parents, who request an integrative assessment. The patient presents with the aforementioned symptoms as well as:

- Sleep disorders
- Chronic asthenia
- Soft, movable lymphadenopathies, uncomfortable on palpation in right axilla, neck and right groin.
- No growth nor weight gain for the past 8 months.

November 2022



September 2024



5 Clinical progression

Clinical progression

Gradual symptom improvement over the course of 2 years of treatment:

- No more bloating
- Recovery of nails and skin
- Only one lymphadenopathy remaining in the neck.
- Normalization of stool
- Lanugo in the moustache area, indicating continued improvement
- Increased energy and better sleep

6 Latest results (September 2024)

- Immune status: adapted immune system, lymphocyte subpopulations have normalised
- EBV serology: antibodies increase*

*The evolution of lymphocyte typing together with the patient's clinical presentation are better treatment monitoring tools than EBV serology alone, as increased antibodies indicate immune reactivity against the virus, not viral activity.

Clinical situation

The patient maintains a very good overall status, with no colds or herpes outbreaks, full recovery of nails, absence of skin lesions, and significant growth of 7 cm and weight gain of 6 kg since treatment initiation. Fine facial hair and thicker hair in the nostrils has grown.

7 Conclusions

- This case highlights the importance of an integrative immunological approach to identify disorders at the immunological level and consider EBV reactivation as a cotrigger.
- Tracking EBV as a contributing factor is crucial, given its potential impact on various clinical conditions.
- The combined strategy based on micronutrition and micro-immunotherapy with the aim of restoring balanced and effective immune function led to substantial clinical improvements.
- The normalization of lymphocyte typing and the favorable clinical response underscore the effectiveness of an integrative immunological approach in rebuilding immune defenses and improving treatment outcomes.

2 Diagnostic approach

Relevant medical history

- Various episodes of tonsillitis and colds since age 2
- Influenza A infection in March 2019
- SARS-CoV-2 infection in May 2021, 6 months before the episode of alopecia.

Clinical judgment

One of the reported episodes of tonsillitis is suspected to be an undiagnosed primary EBV infection. EBV is an immunological stressor

3 Basic treatment (October 2022)

Pending test results, an anti-inflammatory treatment approach is initiated:

Dietary changes

- Gluten-free and bovine dairy-free diet, as these proteins favour inflammation.

Micronutrition

- Dietary supplement containing Omega-3-6, which regulate the

Its reactivation can be triggered by coinfections, such as SARS-CoV-2, which may explain the patient's symptoms.⁶

- Suspected diagnosis: Alopecia universalis and parapsoriasis secondary to EBV reactivation.

EBV serology and lymphocyte typing requested to comprehensively assess the patient's immune status and confirm/rule out the suspected diagnosis.

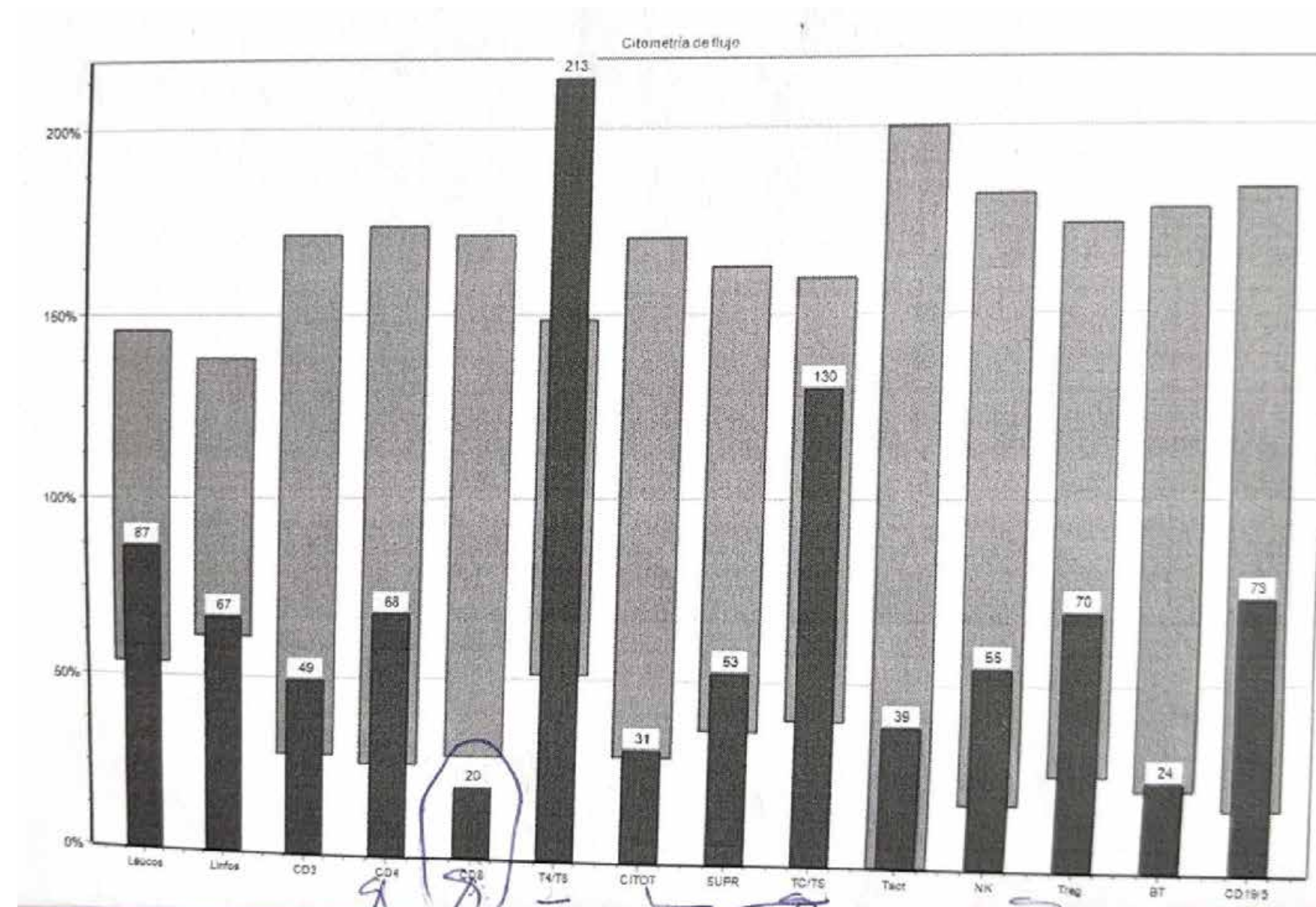
synthesis of inflammatory prostaglandins and help reduce inflammation without suppressing immunity.

- Vitamin D3 to regulate gut permeability and modulate immunity in favour of antigen presentation.

Micro-immunotherapy

Formula ARTH to sustainably downregulate inflammatory mediators towards a protective level.

4 Initial results (November 2022)



Test results

- EBV serology shows evidences of EBV reactivation (elevated anti-VCA and anti-EBNA Abs)
- Lymphocyte typing shows the characteristics of an autoimmune process with a favorable prognosis: non-adapted, hyporeactive immune system: low CD8+ T cells are indicative of limited cytotoxic capacity and thus impaired antiviral defense.
- Additional serological testing reveals high levels of HSV-1 and VZV Abs, frequently concomitant with increased levels of EBV Abs

Treatment adjustment

After the anti-inflammatory treatment, and upon confirmation of

SEROLOGICAL PROFILE (IGG) - ELISA			
EPSTEIN-BARR VIRUS (VCA), IgG	54,80*	S/CO	
Reference values S/CO:			
Negative: <0.75 / Indeterminate: 0.75 -1.0 / Positive: > 1.0			
EPSTEIN-BARR VIRUS EARLY ANTIGEN IgG	<5,00	UI/mL	
Reference values (UI/mL):			
Negative: 0 - 10 / Indeterminate: 10 - 40 / Positive: > 40			
EPSTEIN-BARR VIRUS ANTI-NUCLEUS IgG	10,0*	Index	
Reference values (UI/mL):			
Negative: Index 0 - 0.9 / Indeterminate: Index 0.9 - 1.1 / Positive: Index >1.1			
CMV (Cytomegalovirus), IgG	0,5	UA/mL	Below 6.0
HERPES SIMPLEX VIRUS I IgG	7,76*	Index	
Reference values:			
Negative: Index below 0,59 / Indeterminate: Index between 0,60 - 0,99 / Positive: Index above 1,00			
HERPES SIMPLEX VIRUS II IgG	0,07	Index	
Reference values:			
Negative: Index below 0,50 / Indeterminate: Index between 0,51 - 0,99 / Positive: Index above 1,00			
VARICELLA ZOSTER VIRUS IgG	425,80*	mUI/mL	0,00 - 135,00
Reference values:			
Negative: < 135 / Indeterminate: 136-164 / Positive: >165			

the suspected diagnosis, an immunoregulatory antiviral treatment is initiated:

- Alternate intake of the **micro-immunotherapy** formulas EBV and EID to upregulate immunity without overactivating it and support the antiviral defense against EBV infection.

Also, a dietary supplement containing vitamins, minerals, short-chain fructooligosaccharides and *S. boulardii*, is added to treatment to enhance micronutrient absorption

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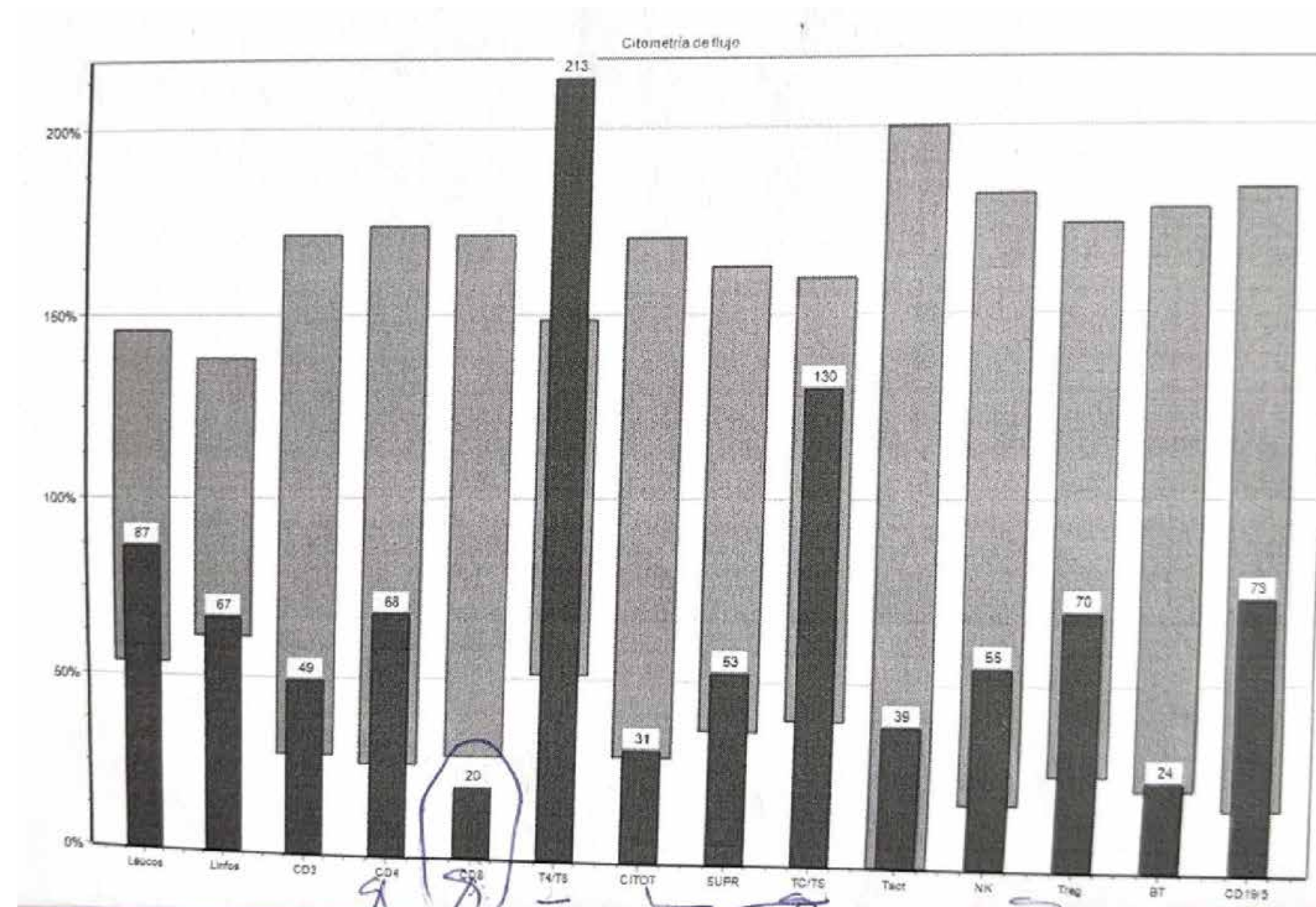
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Treatment adjustment

After the anti-inflammatory treatment, and upon confirmation of

SEROLOGICAL PROFILE (IGG) - ELISA			
EPSTEIN-BARR VIRUS (VCA), IgG	88,16*	S/CO	
Reference values S/CO:			
Negative: <0.75 / Indeterminate: 0.75 -1.0 / Positive: > 1.0			
EPSTEIN-BARR VIRUS EARLY ANTIGEN IgG	<5,00	UI/mL	
Reference values (UI/mL):			
Negative: 0 - 10 / Indeterminate: 10 - 40 / Positive: > 40			
EPSTEIN-BARR VIRUS ANTI-NUCLEUS IgG	8,9*	Index	
Reference values (UI/mL):			
Negative: Index 0 - 0.9 / Indeterminate: Index 0.9 - 1.1 / Positive: Index >1.1			
CMV (Cytomegalovirus), IgG	0,3	UA/mL	Below 6.0
HERPES SIMPLEX VIRUS I IgG	14,50*	Index	
Reference values:			
Negative: Index below 0,59 / Indeterminate: Index between 0,60 - 0,99 / Positive: Index above 1,00			
HERPES SIMPLEX VIRUS II IgG	0,07	Index	
Reference values:			
Negative: Index below 0,50 / Indeterminate: Index between 0,51 - 0,99 / Positive: Index above 1,00			
VARICELLA ZOSTER VIRUS IgG	421,00*	mUI/mL	0,00 - 135,00
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