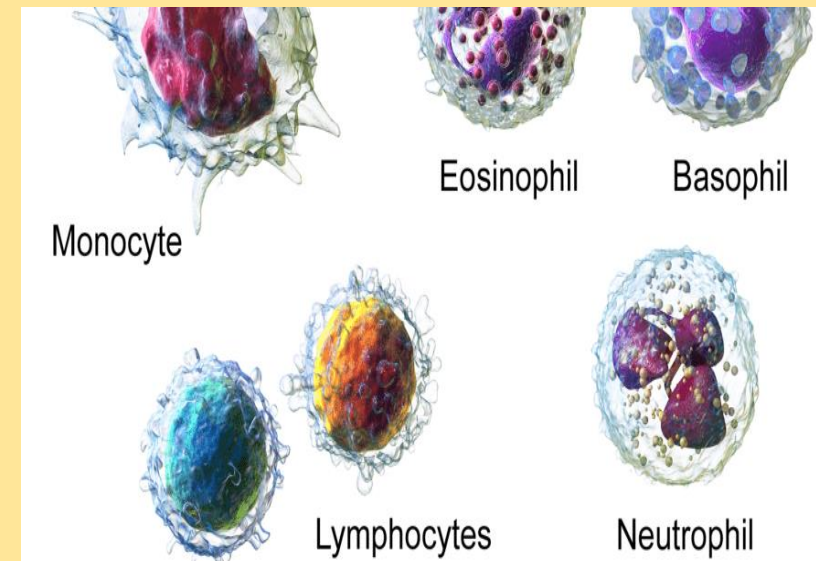




# Isolated persistent leukopenia as a marker of autoimmune disorder



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# Chronic leukopenia

- **chronic neutropenia** : low neutrophil level on at least three occasions over 3 months.
- chronic leukopenia reasons:
- **Inherited conditions**(congenital disorders) , these may lead to leukopenia. (Kostmann syndrome , myelokathexis).
- **Cancer**: Leukemia cells can force the cells in the bone marrow and lead to leukopenia.
- **Blood cell and bone marrow conditions**: anemia, overactive spleen, and MDS.
- **Autoimmune disorders**: SLE ,RA.
- **Infectious diseases**: HIV and tuberculosis.

- In this study, our aim is to evaluate the etiology of **persistent isolated leukopenia** (at least 3-4 months) (unrelated to neutropenia).



- In this **retrospective data review** study, patients who referred to the **outpatient hematology clinic** of Lorestan University of Medical Sciences (Iran) due to leukopenia **between 2017 and 2022** were evaluated.
- Patients with **lymphopenia & neutropenia** were **excluded** from the study.
- **CBC** and **final diagnoses** without any clinical symptoms (if available) of cases were collected.



# Chronic leukopenia

- 1. isolated leukopenia
- 2. neutropenic leukopenia
- 3. lymphopenic leukopenia

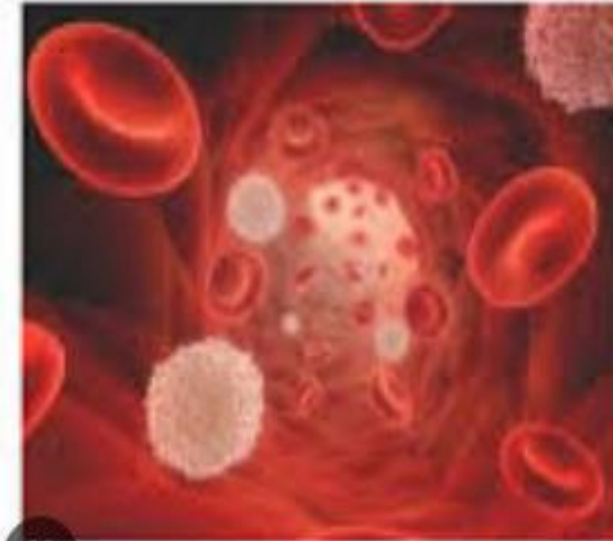




# Methodology:

- **Step1:patient screening**
- **Questionare:**
- Inclusion criteria:
- Persistent leukopenia:  $WBC < 4000$  for months
- Age:-sex-
- **Step 2:Autoimmune disease screening:**
- TSH-anti TPO-c3,c4,CH50-Coombs(D,ID)-anti LKM1-ANA-RF-ttG IgA,G-

## ALL ABOUT LEUKOPENIA



# Results:

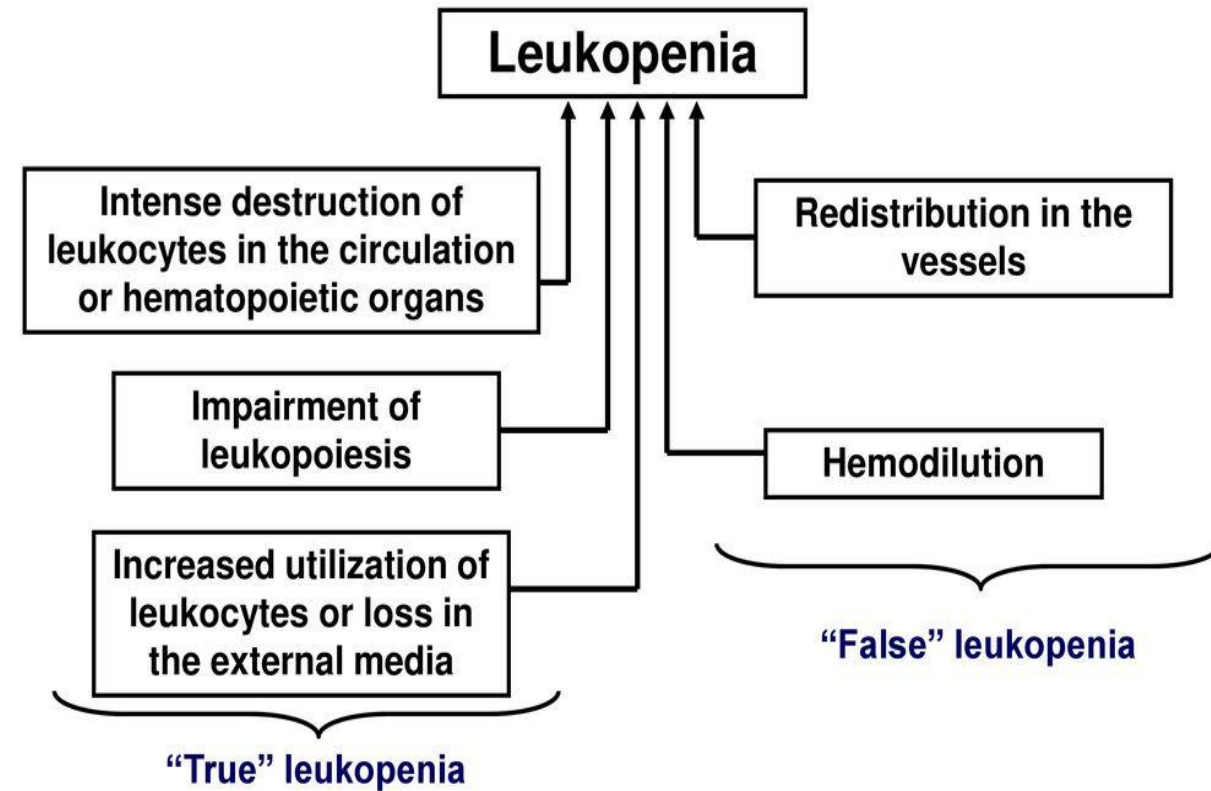
- 120 patients were included in this study. 55 people (45.8%) were women and 65 people (54.2%) were men.
- **etiological disease affecting these leukopenic patients were as follows:**
- **thyroid autoimmune disease (8.32%), iron deficiency anemia due to celiac disease (6.24%), chronic use of drugs (2.15%). (50.81)**
- **Immunity/autoinflammatory** :(3.9%), such as rheumatological diseases, psoriasis and alopecia are (5.7%), chronic infection (5%), hypersplenism (3.1%), (8.3%) and B12 deficiency ( 8.1%).
- No cause was identified in **35 patients. (29.16%)**
- Doctors did not prescribe bone marrow tests in patients with more neutropenia.
- **isolated ANA positive** is also considered in favor of autoimmunity, **24/120 (20%)** cases had autoimmunity diagnosis or laboratory findings.

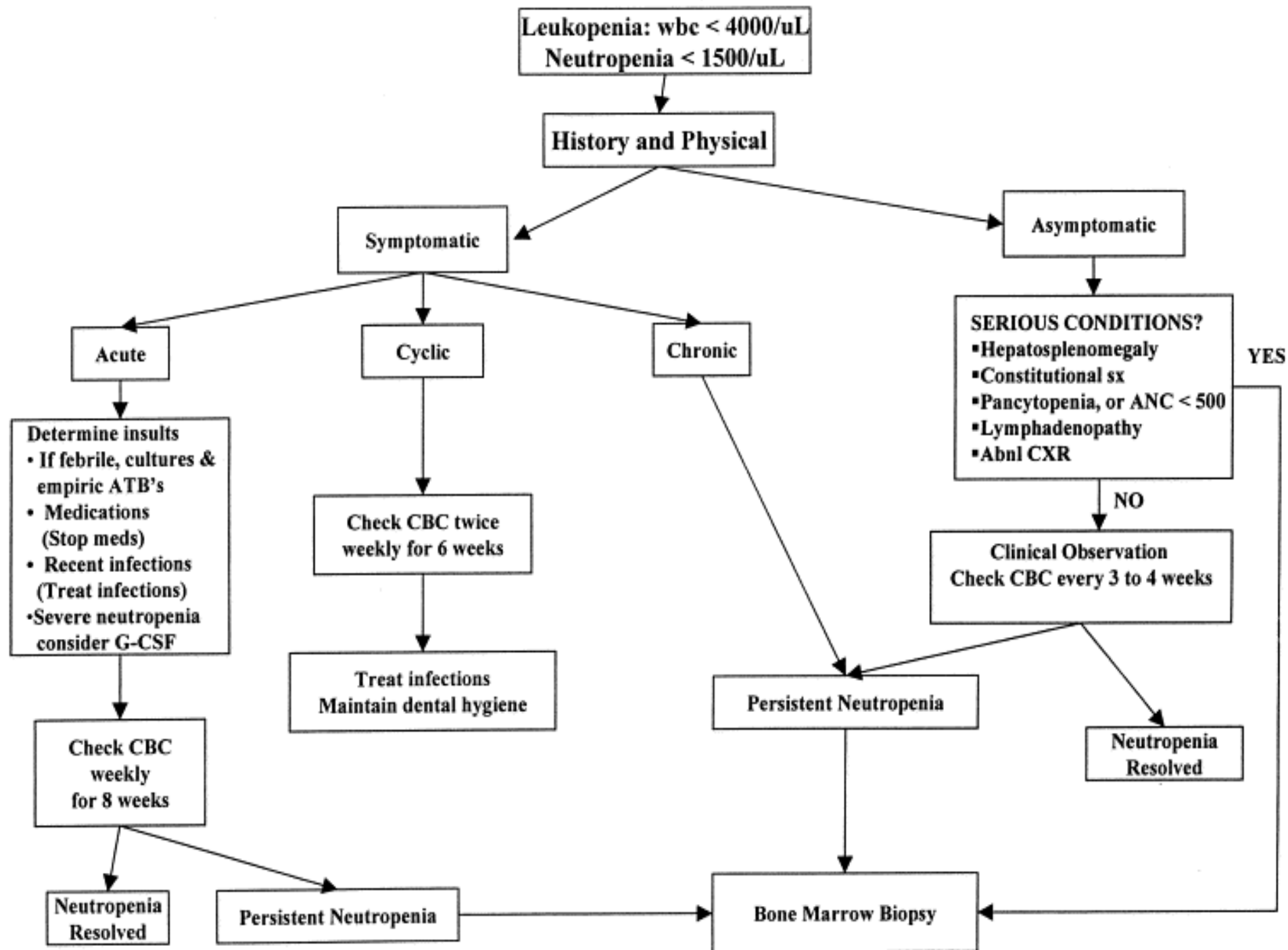
- In the present study, the most common causes of **isolated leukopenia** in **non-neutropenic patients** are autoimmune diseases :
- 1.Hashimoto's thyroiditis,
- 2 .celiac disease,
- 3.autoimmune/autoinflammatory diseases, and autoimmune diseases such as rheumatic diseases. .
- Iron is dependent on celiac disease, autoimmune/autoinflammatory diseases, and hematopoietic disorders,
- so **autoimmunity** is recognized as an important factor leading to persistent isolated leukopenia.



بیماری	فراوانی نسبی	درصد مردان 54.2%	درصد زنان 45.8%
thyroid autoimmune disease	8.32%	65.4	34.6
B12 deficiency	8.1%	56.5	43.5
chronic use of drugs	2.15%	71.3	38.7
celiac disease	6.24%	65.8	34.2
Psoriasis& Alopecia& RA	5.7%	56.3	43.7
isolated ANA+	53.8%	65.9	34.1
chronic infection	5%	55	45
Hypersplenism	3.1%	27.4	72.6
Other disease	9%	68.1	21.9

## MECHANISMS OF LEUKOPENIA









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