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**Lymphopenia**

**Presentation**

Definition

Lymphocyte count < 1.5 x 109/L

* Mild lymphopenia: 1-1.5 x 109/L
* Moderate lymphopenia: 0.5-1 x 109/L
* Severe lymphopenia < 0.5 x 109/L may predispose to opportunistic infections such as pneumocystis pneumonia, oesophageal candidiasis, herpes zoster and systemic cytomegalovirus infection.

**Clinical Findings**

* Lymphopenia is a common non specific finding which increases in frequency with increasing age and comorbidities. It is often of no pathological significance. In many cases the lymphopenia is transient and most cases do not require specialist input.
* HIV infection is commonly associated with lymphopenia and is an important diagnosis to exclude in patients with chronic moderate to severe lymphopenia.
* Lymphopenia is a rare association with haematological conditions but can be observed in lymphoproliferative disorders. It is a common finding post chemotherapy and radiotherapy.

**Causes**

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| Infection | Acute bacterial/ viral/ fungal  Chronic: **HIV**, Hepatitis B/C |
| Medication | Steroid usage  Immunosuppressive medications  Chemotherapy  Monoclonal antibody therapy |
| Systemic disorders | Auto-immune disease  Inflammatory bowel disease  Renal failure  Sarcoidosis |
| Malignancy | Lymphoproliferative disorders. Solid organ malignancies. |
| Others | Exercise, Malnutrition, Alcohol abuse, Radiotherapy, Recent surgery, Stress |
| Congenital immune disorders (rare) | Recurrent severe infections often but not always presenting in childhood, failure to thrive and sometimes auto-immune and inflammatory manifestations. |

**History **

Important Features include:

* Any recent infections
* Risk factors for HIV or hepatitis
* Drug history
* Alcohol history
* Nutritional status

**Symptoms and Signs**

* Are there constitutional symptoms suggestive of malignancy (fever, weight loss, night sweats)
* Assess for lymphadenopathy and hepatosplenomegaly

**Investigations**

* If the patient otherwise well with isolated lymphopenia, repeat FBC at 6 months and if clinical condition and blood count stable, suggest no further investigation
* If no worrying features no further investigation required if lymphocyte count > 0.5 in elderly or > 1 in younger adults

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| Initial Investigations | Investigations to consider |
| Repeat FBC + Blood film | B12/folate |
| U+E |
| LFT including gamma glutamyl transferase |
| Virology: **HIV**, Hepatitis B/C |
| Auto-antibody screen: ANA, anti-phospholipid antibodies (anticardiolipin antibodies and lupus anticoagulant) if connective tissue disorder suspected |
| Serum immunoglobulins and protein electrophoresis |

**Referral**

Indications for referral

* Suggestive evidence of an underlying malignant, haematological or systemic disorder following first line investigations.
* Refer to most appropriate speciality on basis of clinical and laboratory features
* Suspected primary immunodeficiency: suggest refer Immunology (Southampton)
* Persistent severe lymphopenia with recurrent infections: Suggest refer Immunology (Southampton)

**References**