

Periferik Yaymanın Değerlendirilmesi

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09.09.2023

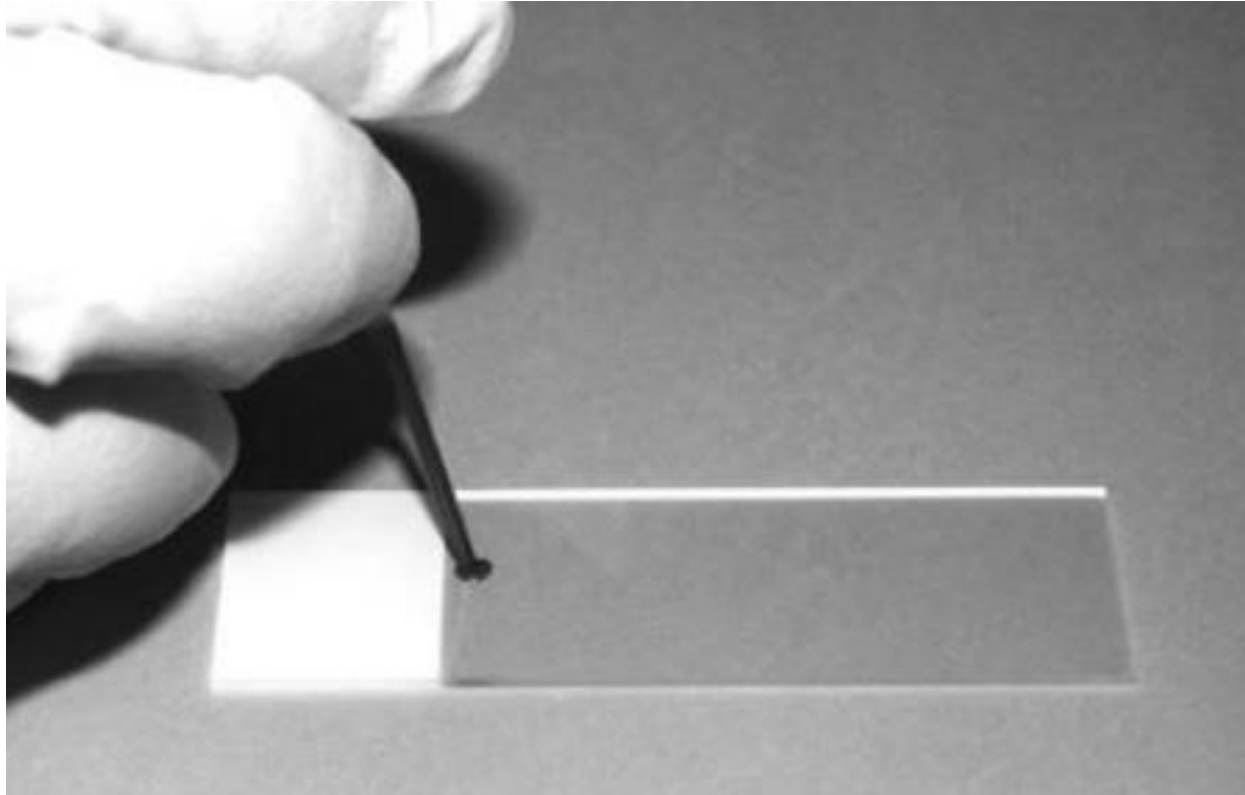
Hisar Intercontinental Hospital Hematoloji ve Kemik iliği Nakli Kliniği

Periferik Yayma

- Periferik kan örneğinin sitolojik incelemesi
- Morfolojik bilgi verir sayısal açıdan kısıtlı bilgi
- Hemogram ve klinik bilgi ile birlikte değerlendirilmeli

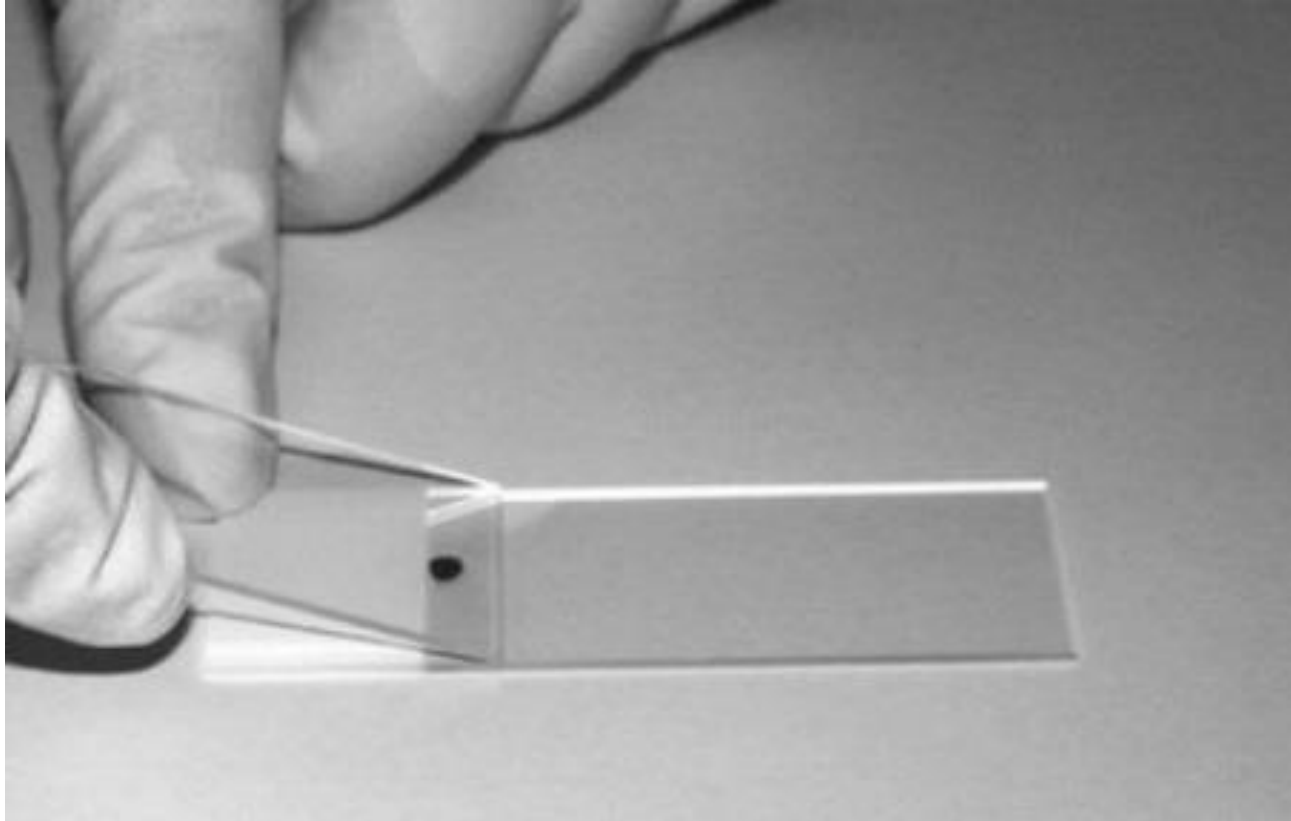
Kan örneđi yayılması

- Bir damla =??? Lam bir ucuna damlat
- 3 mm / 5 mcl



Kan örneđi yayılması

- Tek bir alışkan hareket ile yay
- 30-45 derece açı (htc ↓ açı ↑)

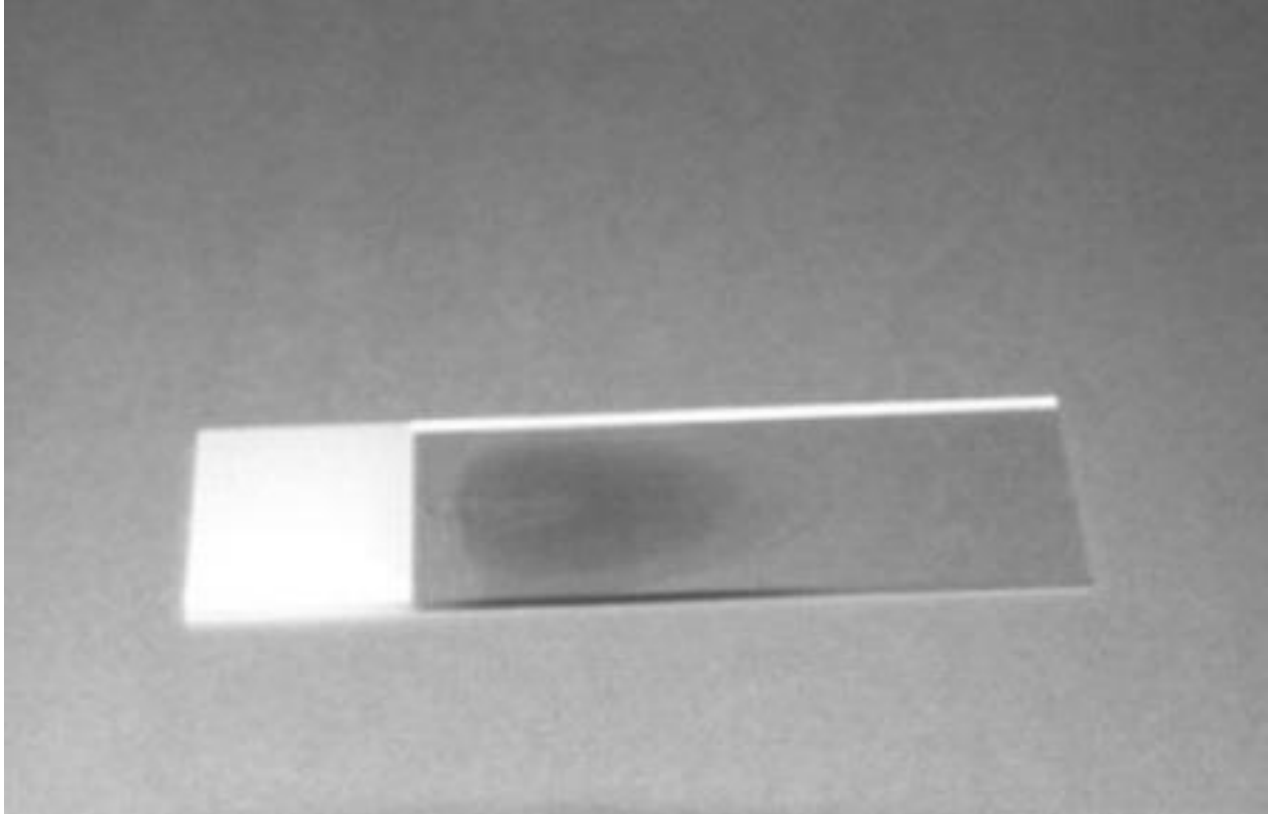


Kan örneđi yayılması



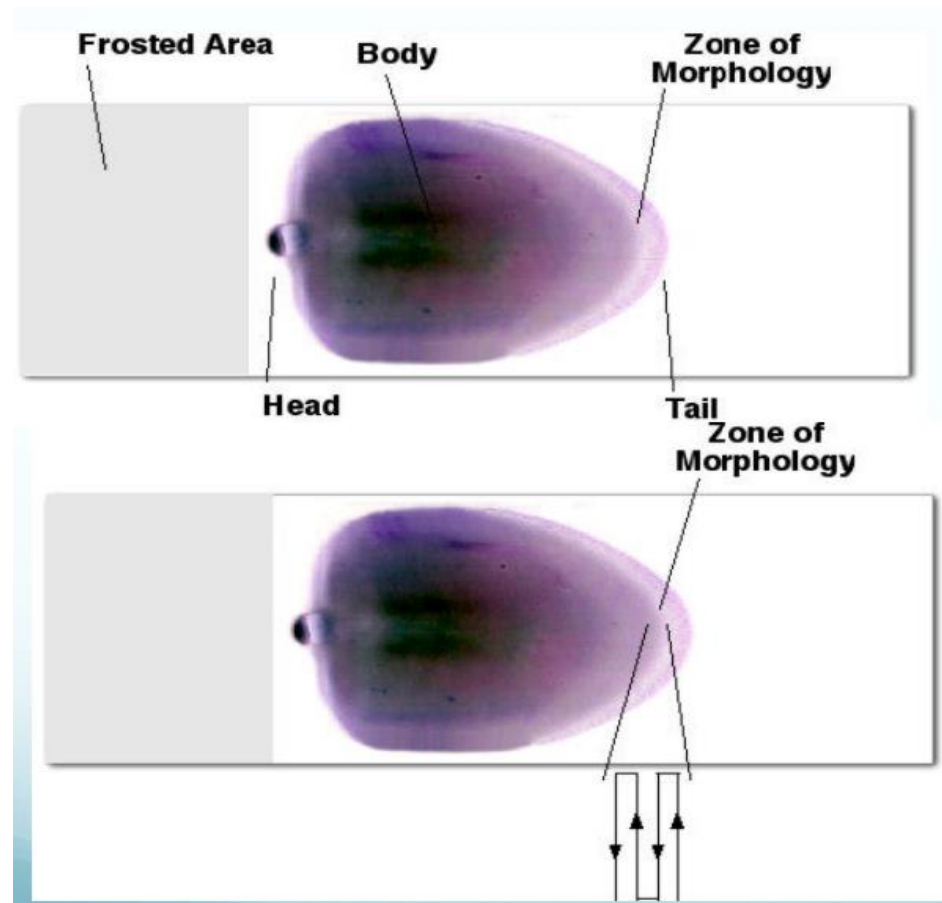
Kan örneđi yayılması

- Taze kan parmak ucu veya EDTA'lı tüp
- 1 saat içinde yayılmalı

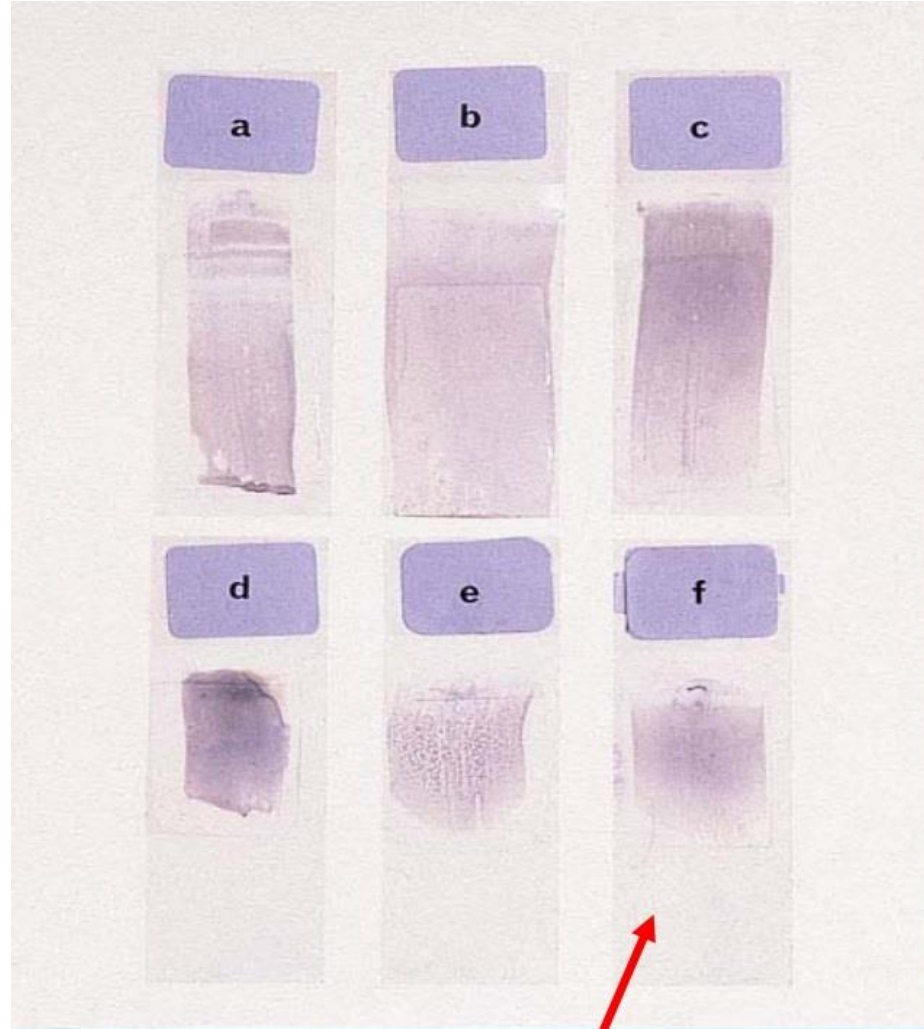


Doğru Yayma

- «Mum alevi»



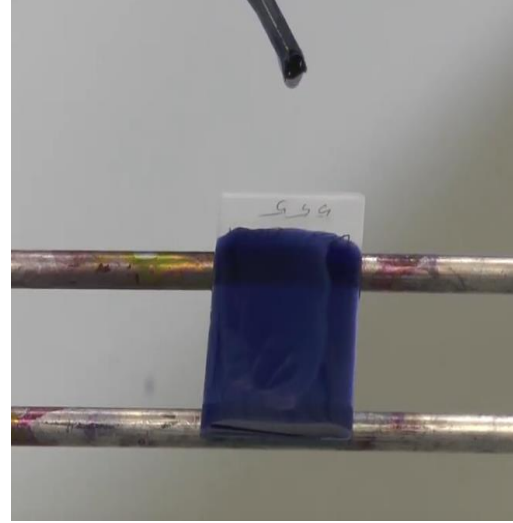
Yanlış Yayma



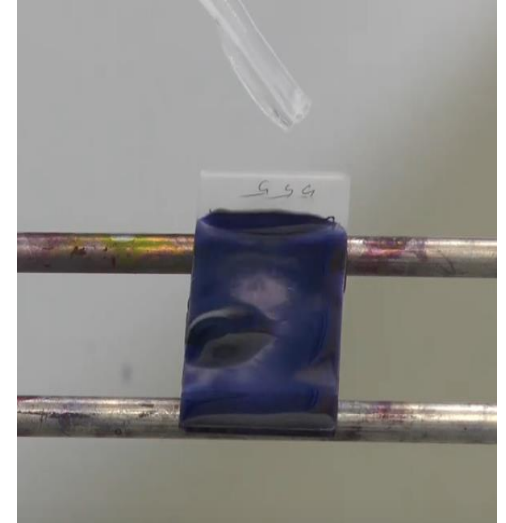
Boyama

- Boyama öncesi kurumasına izin verilmeli (en az 30 dk)
- Boyaların asidofilik (eozinofilik) ve bazofilik konponentleri olmalı
- May Grünwald & Giemsa (Pappenheimer)
- Wright boyama

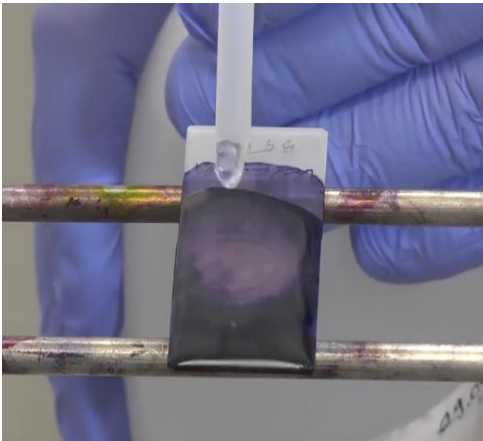
5 ml May-Grünwald dök
3 dakika bekle



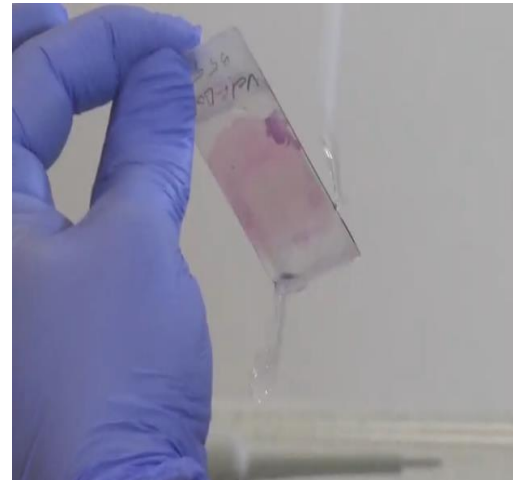
Boyayı dökmeden
distile su ekle



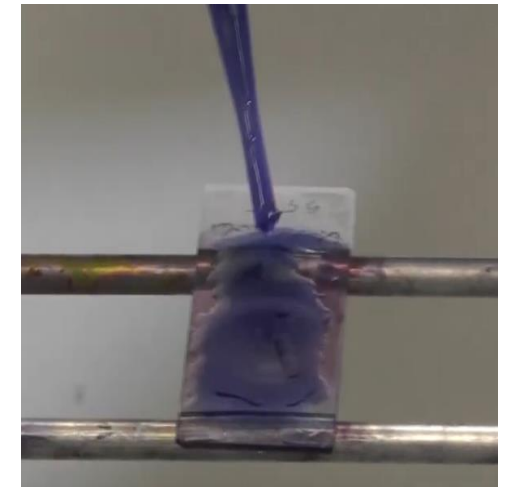
Dökülmemesine dikkat
et



Boyayı tuttuğuna emin
olunca (3dk) yıka 5
dakika bekle



Giemsa 1/10 dilüe 20
dk



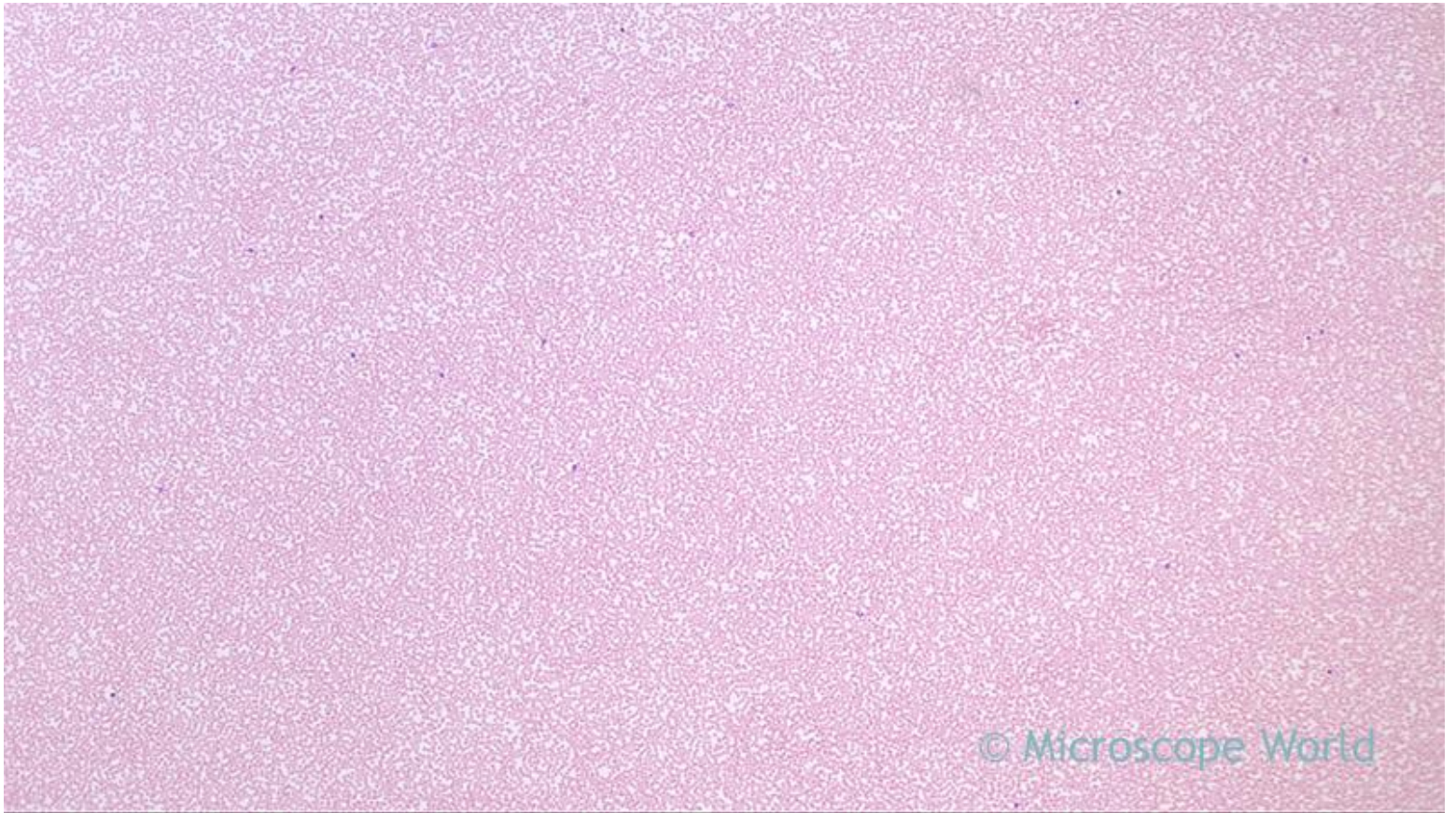
Değerlendirme

- Lamı mikroskopa yerleştir
- X4 = alan bul
- X10, X40 hızlı sayımda kullanılabilir
- X100 = morfoloji değerlendirme



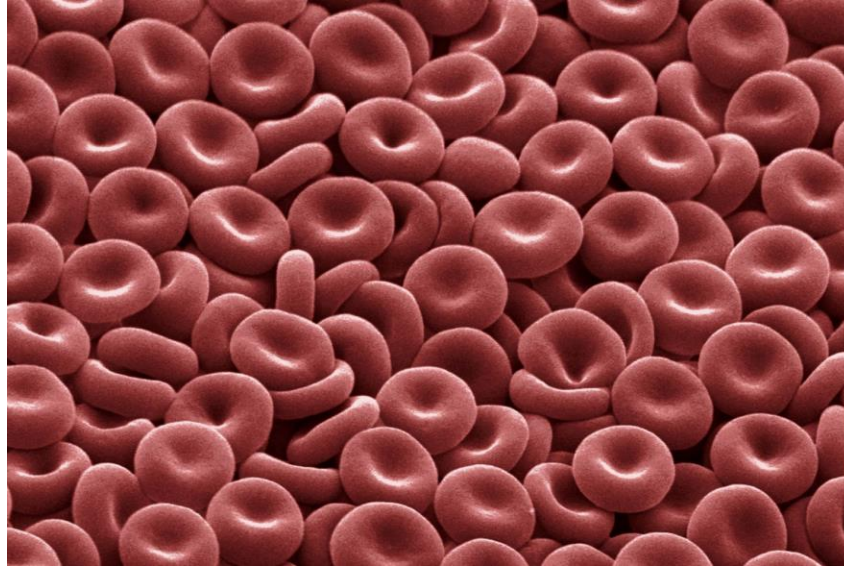
Değerlendirme

- 4x

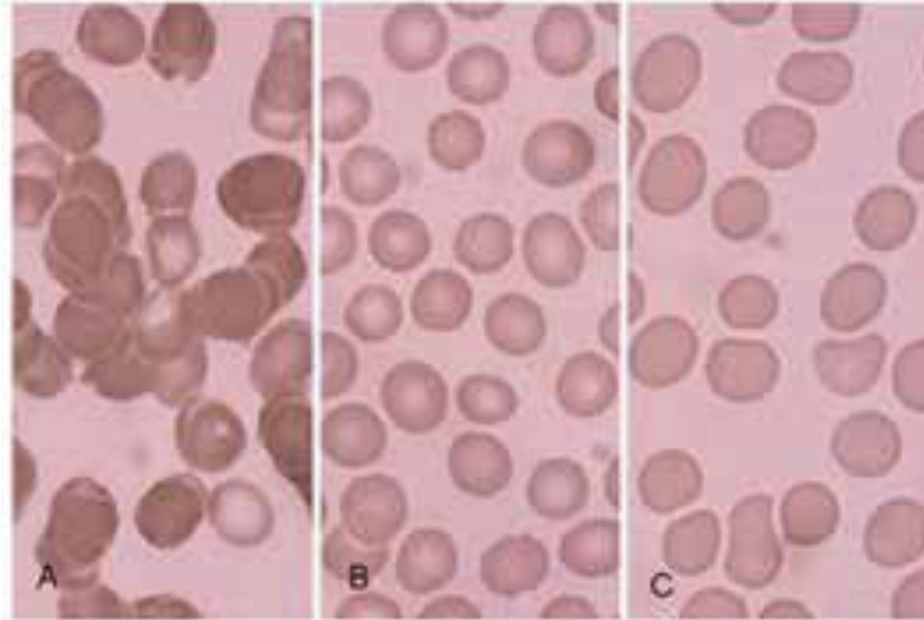


Eritrositler

- B y kl k (normo /mikro/makrosit)
- Boyanma (normo/hipokrom)
- Őekil
- İnk zyon, parazit, birbirleri ile iliŐki



Eritrositler



A) Bař kısmında eritrositler üst üste durur.

B) Eritrosit morfolojisinin inceleneceđi alanda eritrositler birbirinden ayrı ayrı durur ve ortalarındaki hemoglobin bulunmayan alan soluktur.

C) Kuyruk kısmında ise eritrositler ezilerek soluk alanları kaybolmuřtur.

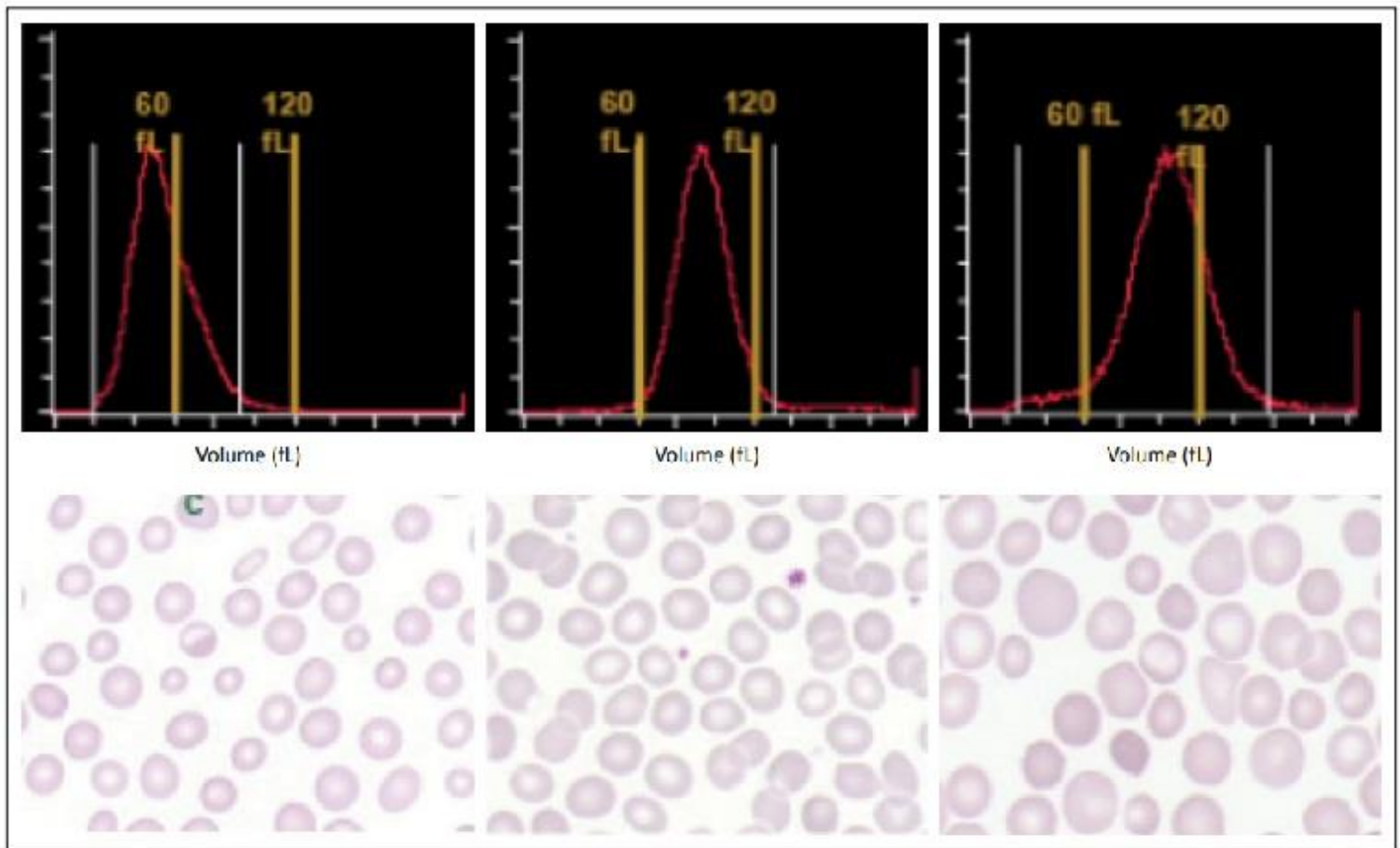
Eritrositler

- Çekirdeksiz, orta açıklık 1/3, lenfosit çekirdeđi boyutunda



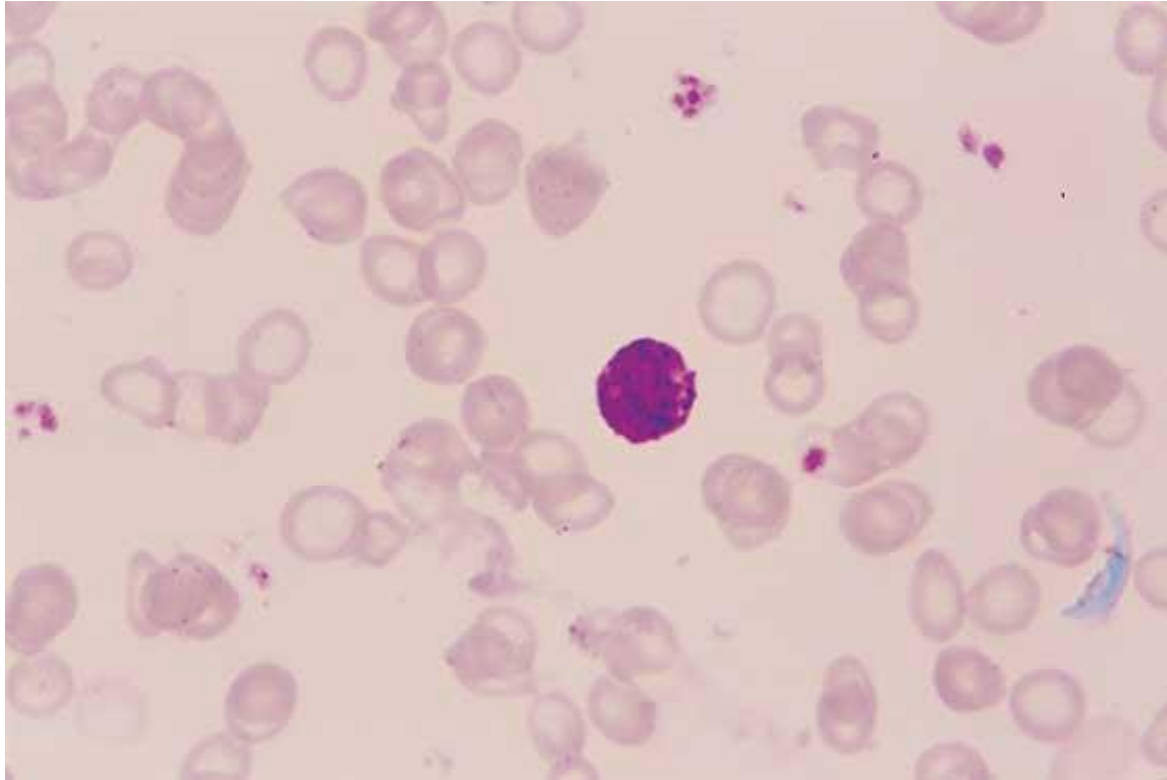
Eritrositler

- MVC-Morfoloji



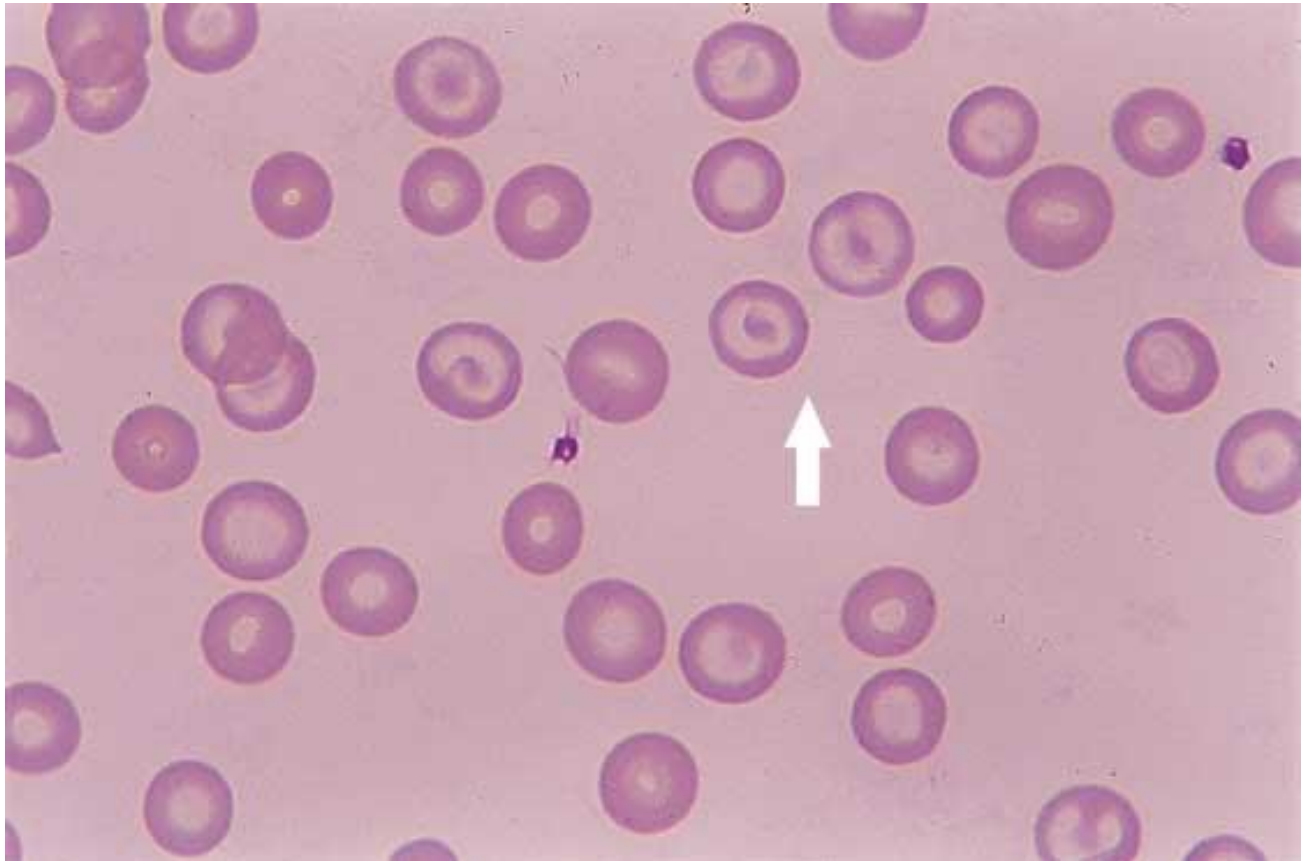
Eritrositler

- Demir eksikliđi
- Hipokrom mikrositer anizositoz



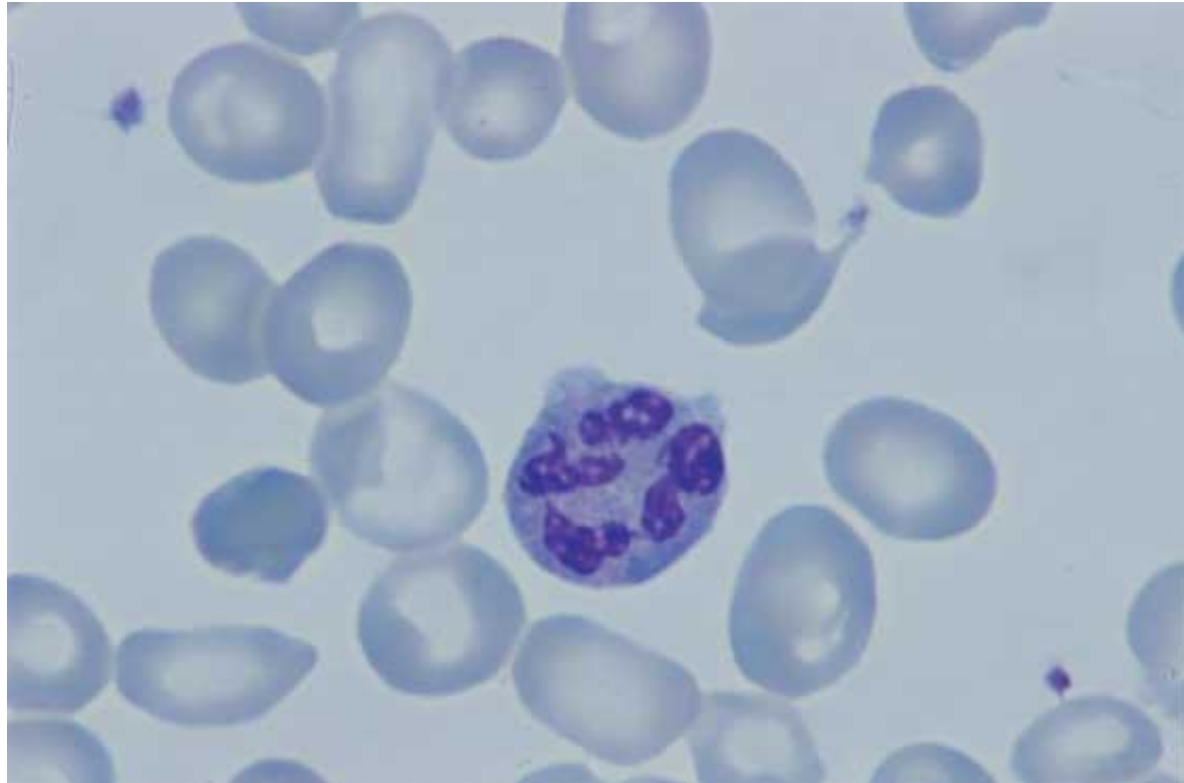
Eritrositler

- Hipokrom mikrositer, target hücreler



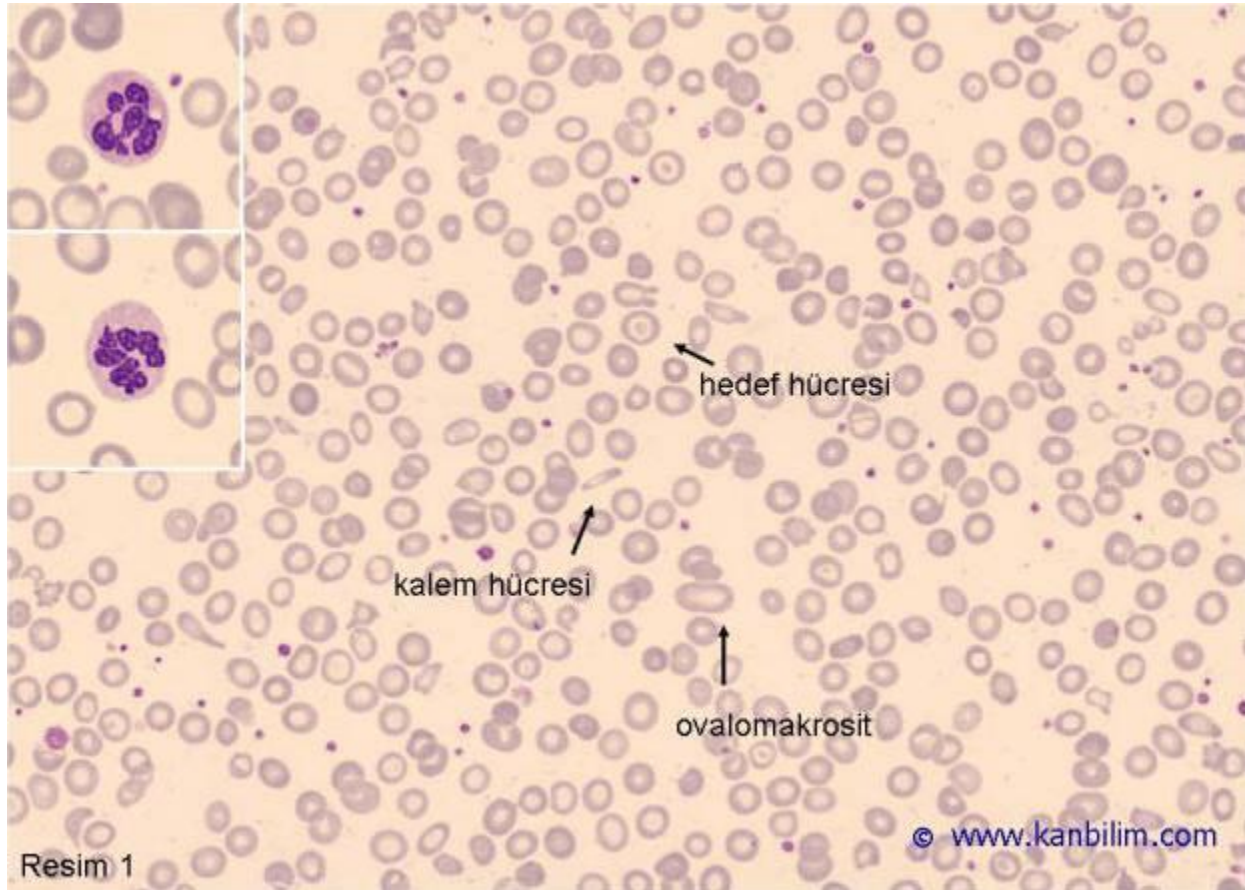
Eritrositler

- B12 eksikliği: makrositoz, anizositoz, hipersegmente wbc



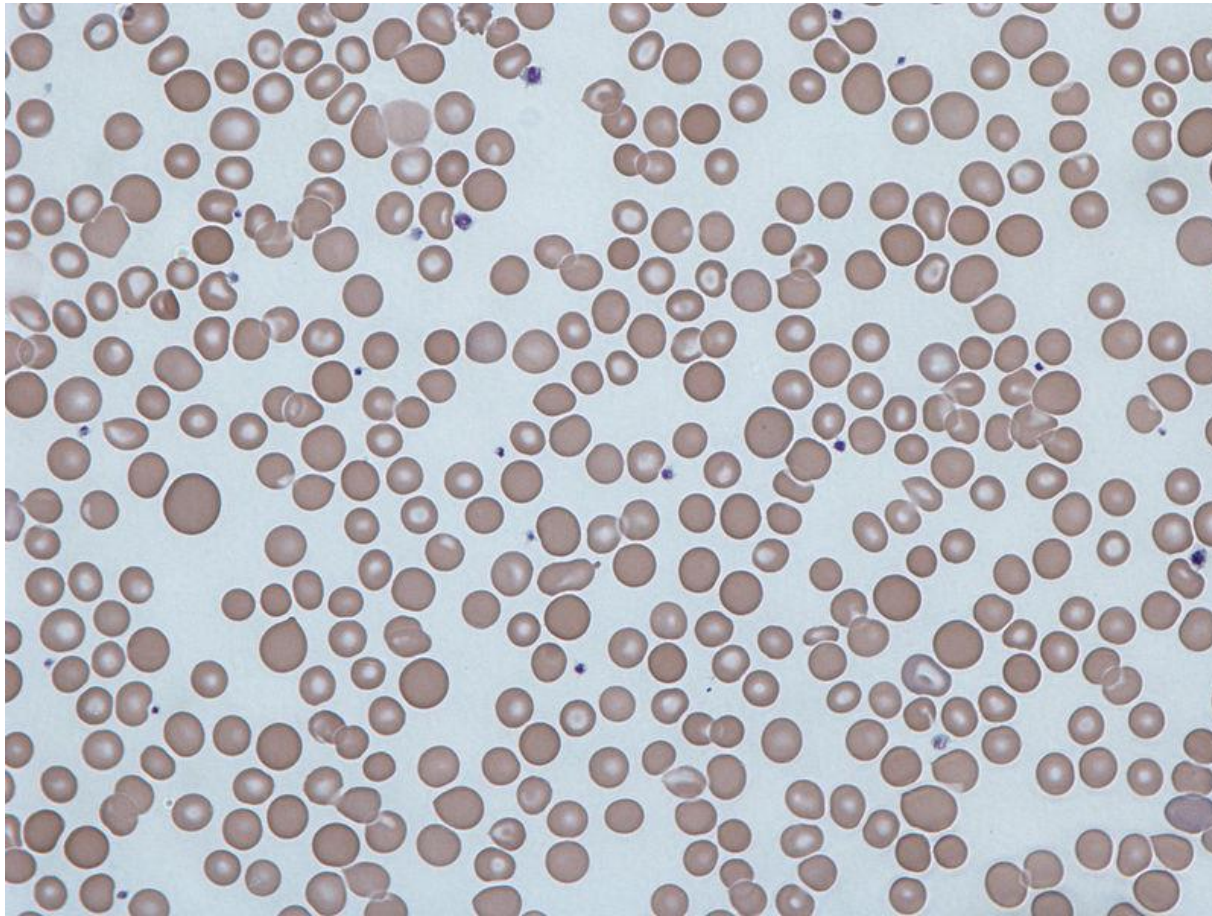
Eritrositler

- Demir ve B12 eksikliği(dimorfik anemi)

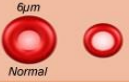
















Eritrositler

- Anizositoz

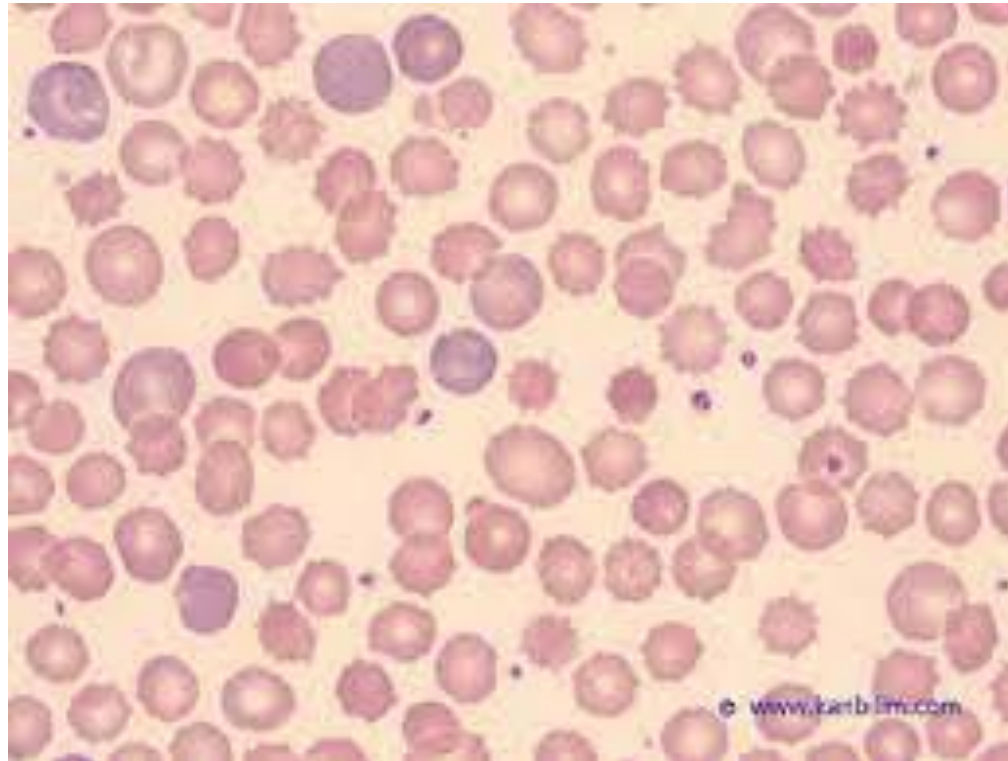


Eritrositler

Abnormal RBC Morphology	Cartoon Image	May be associated with
Microcytic RBC		Pyridoxine deficiency Thalassemia Iron deficiency anemia Chronic disease anemia (sometimes) Sideroblastic anemia (sometimes)
Macrocytic RBC		Vitamin B12 or Folate deficiency Liver Disease MDS Chemotherapy (e.g. methotrexate)
Spurr Cell RBC (Acanthocyte)		Abetalipoproteinemia Liver disease McLeod blood group phenotype Post-splenectomy Etc.
Burr Cell RBC (Echinocyte)		Artifact Uremia Liver disease Etc.
Schistocyte		Microangiopathic Hemolytic Anemia Mechanical valve induced Etc.
Bite Cell RBC		G6PD deficiency Unstable hemoglobin disorders Oxidative drugs
Elliptocyte		Hereditary elliptocytosis Severe iron deficiency anemia
Spherocyte		Hereditary spherocytosis Autoimmune hemolytic anemia
Stomatocyte		Hereditary stomatocytosis Liver disease
Target Cell RBC		Thalassemia Hemoglobinopathies Post-splenectomy Liver disease Artifact
Sickle Cell RBC		Hemoglobin SS disease Hemoglobin SC disease Hemoglobin SD disease S-beta thalassemia
Teardrop		Myelofibrosis Underlying marrow process/infiltrate Etc.
Hemoglobin C Crystals		Hemoglobin C disease Hemoglobin SC disease
Red Cell Agglutinate		Cold autoimmune hemolytic anemia Paroxysmal cold hemoglobinuria IgM associated lymphoma Multiple myeloma
Rouleaux		Chronic liver disease Malignant lymphoma Multiple myeloma Chronic inflammatory diseases

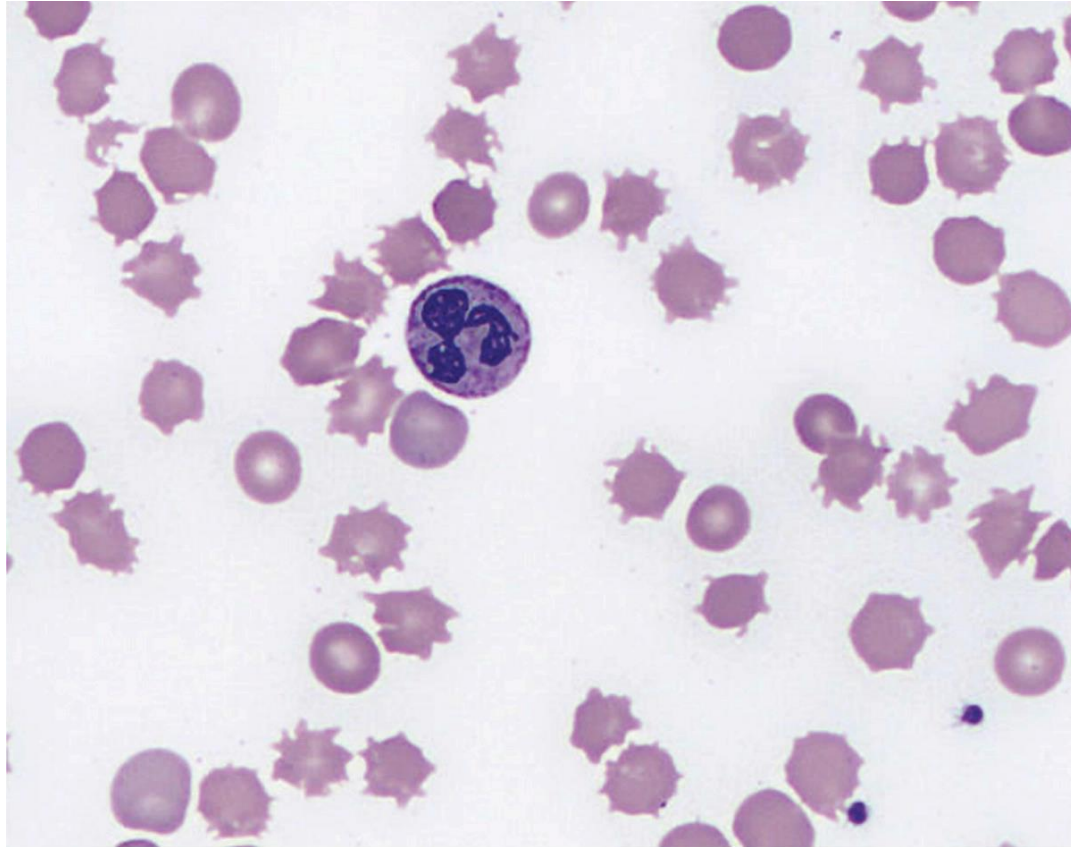
Eritrositler

- Ekinosit (Artefakt, renal yetmezlik, malnütrisyon, herediter hemolitik anemi ...)



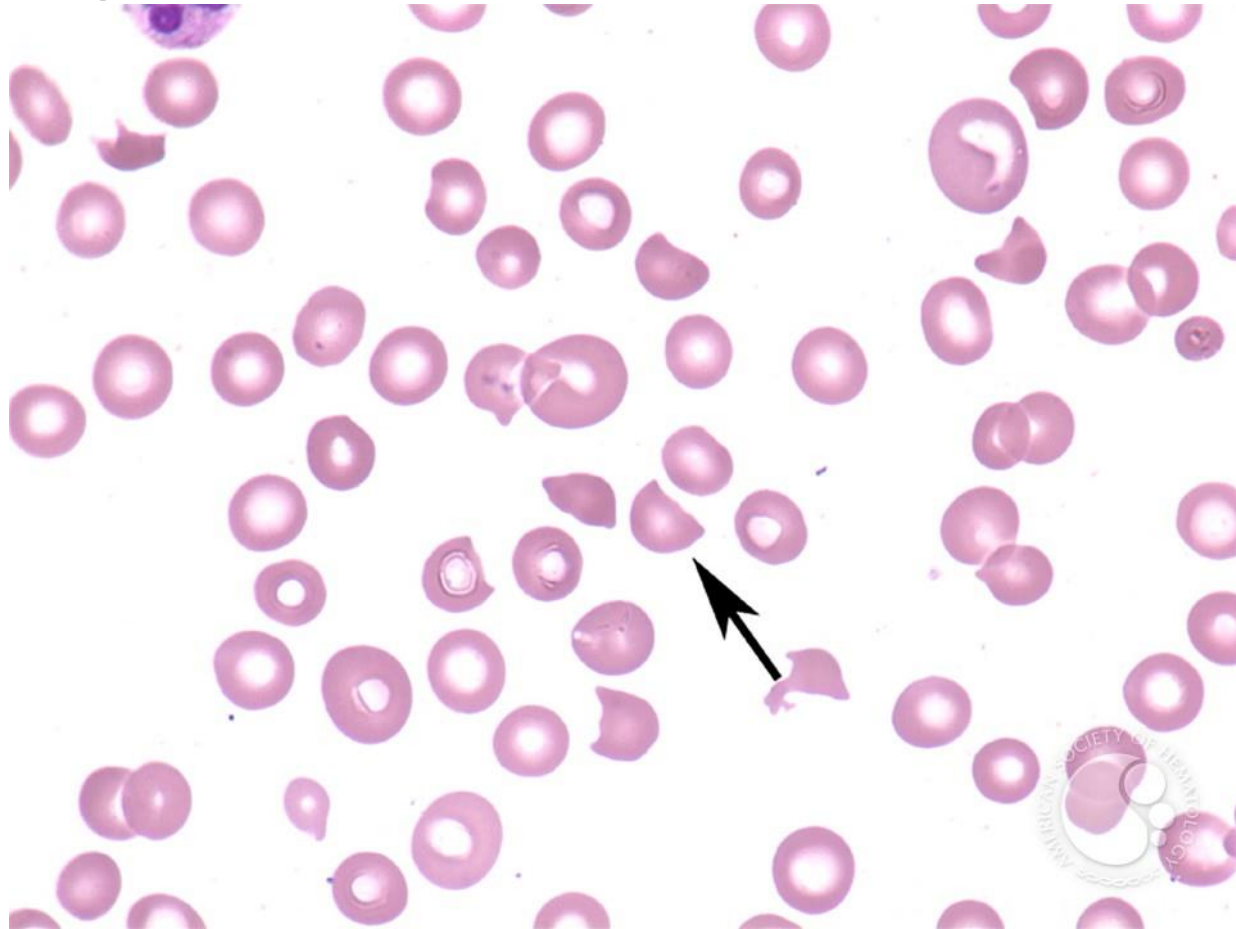
Eritrositler

- Akantosit (Renal/KC Yetmezliđi, splenektomi abetalipoproteinemi...)



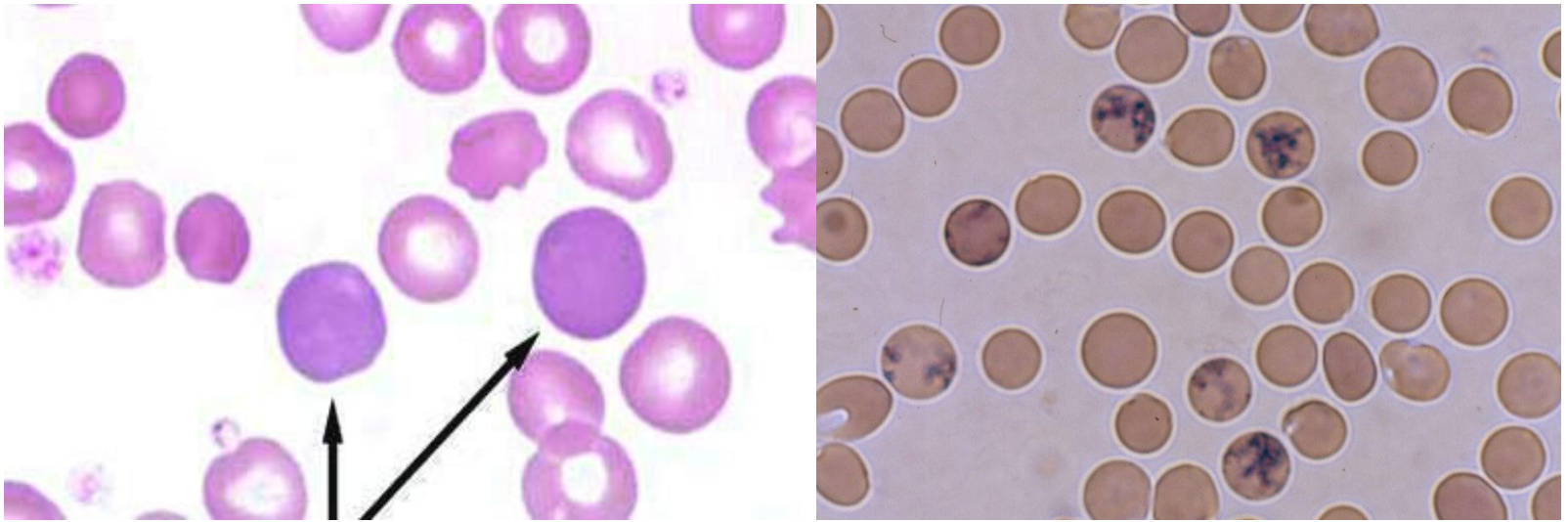
Eritrositler

- **Fragmante Eritrosit**



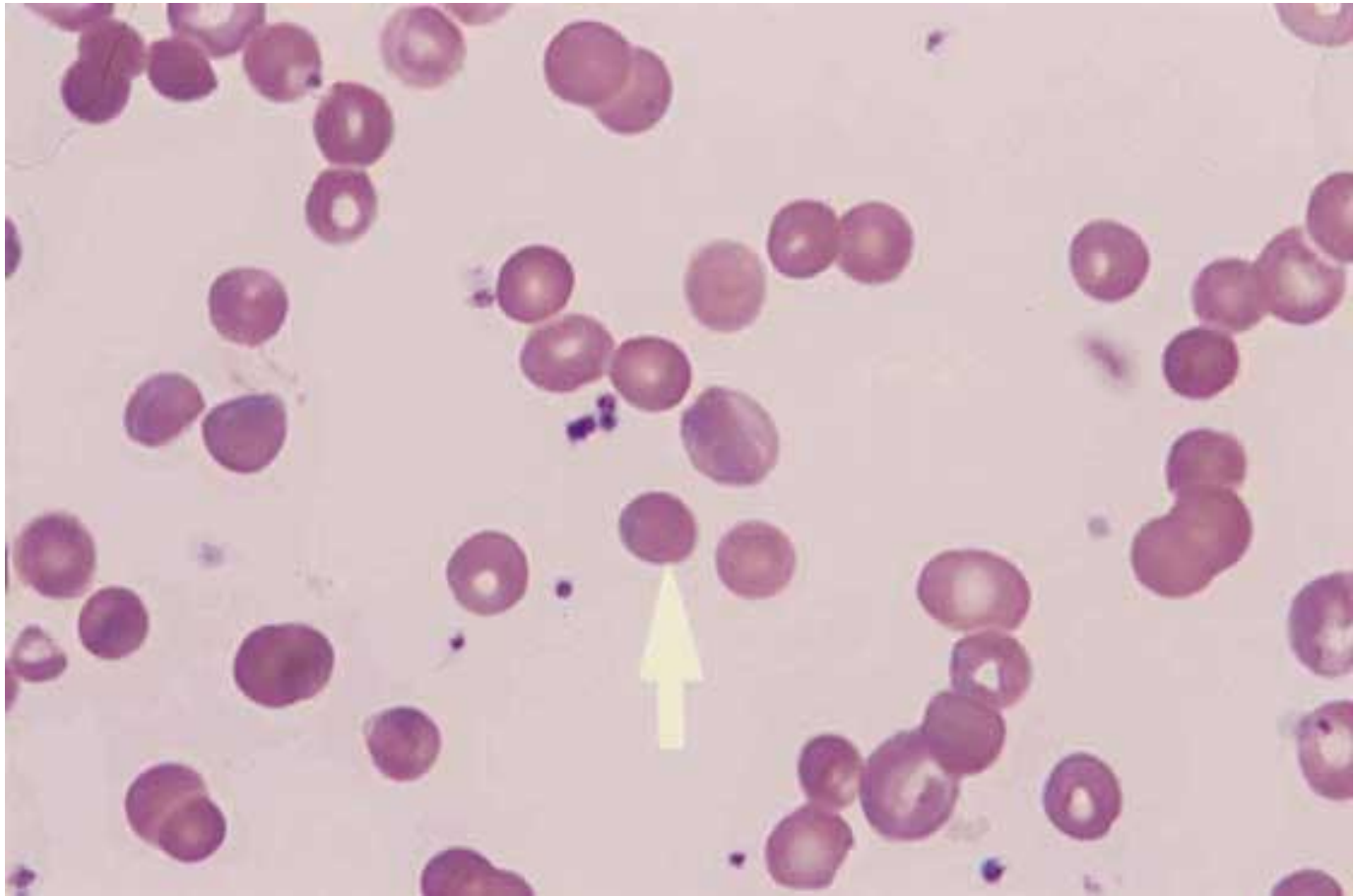
Eritrositler

- Polikromazi / Retikülosit



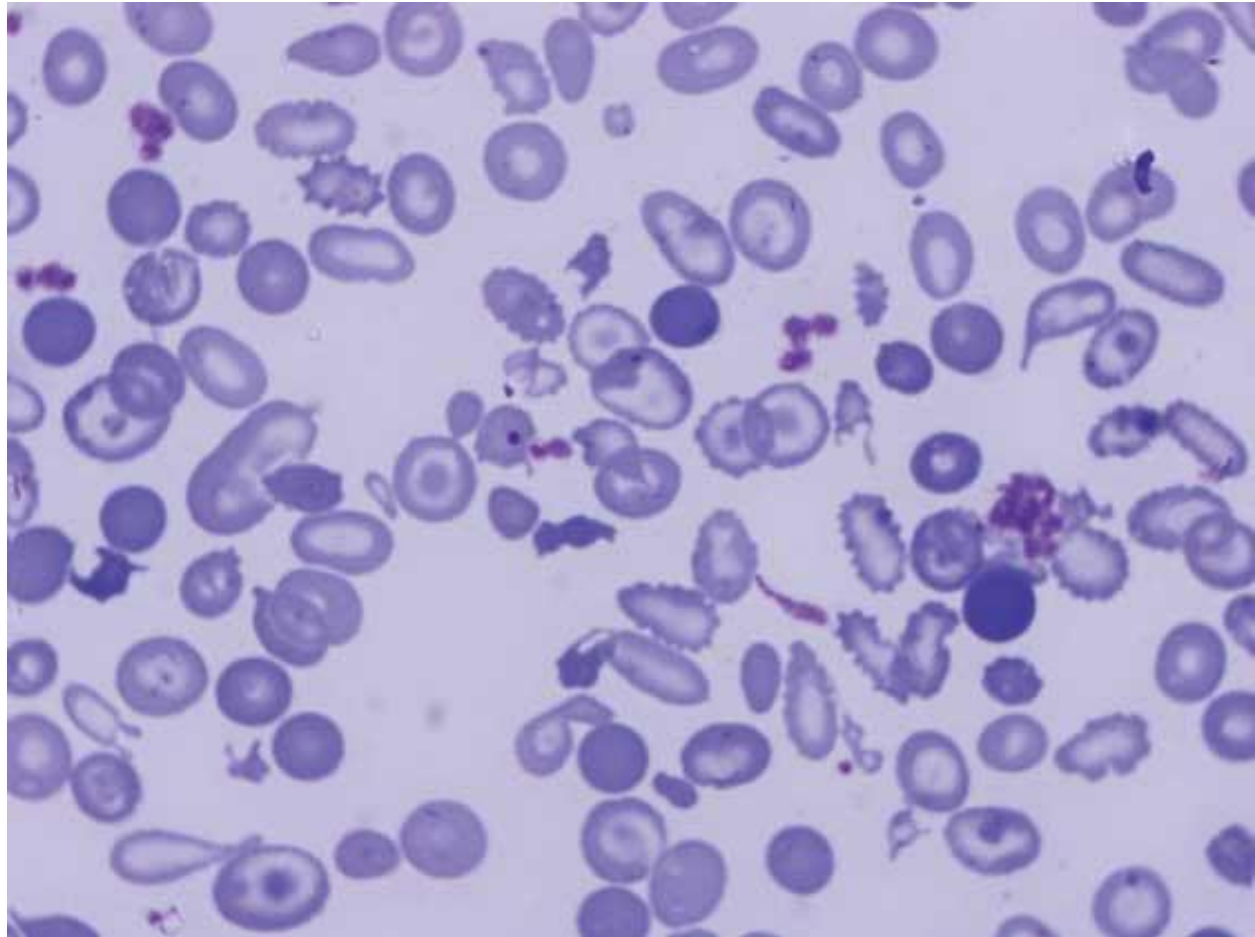
Eritrositler

- Sferosit








Eritrositler

- Poikilositoz



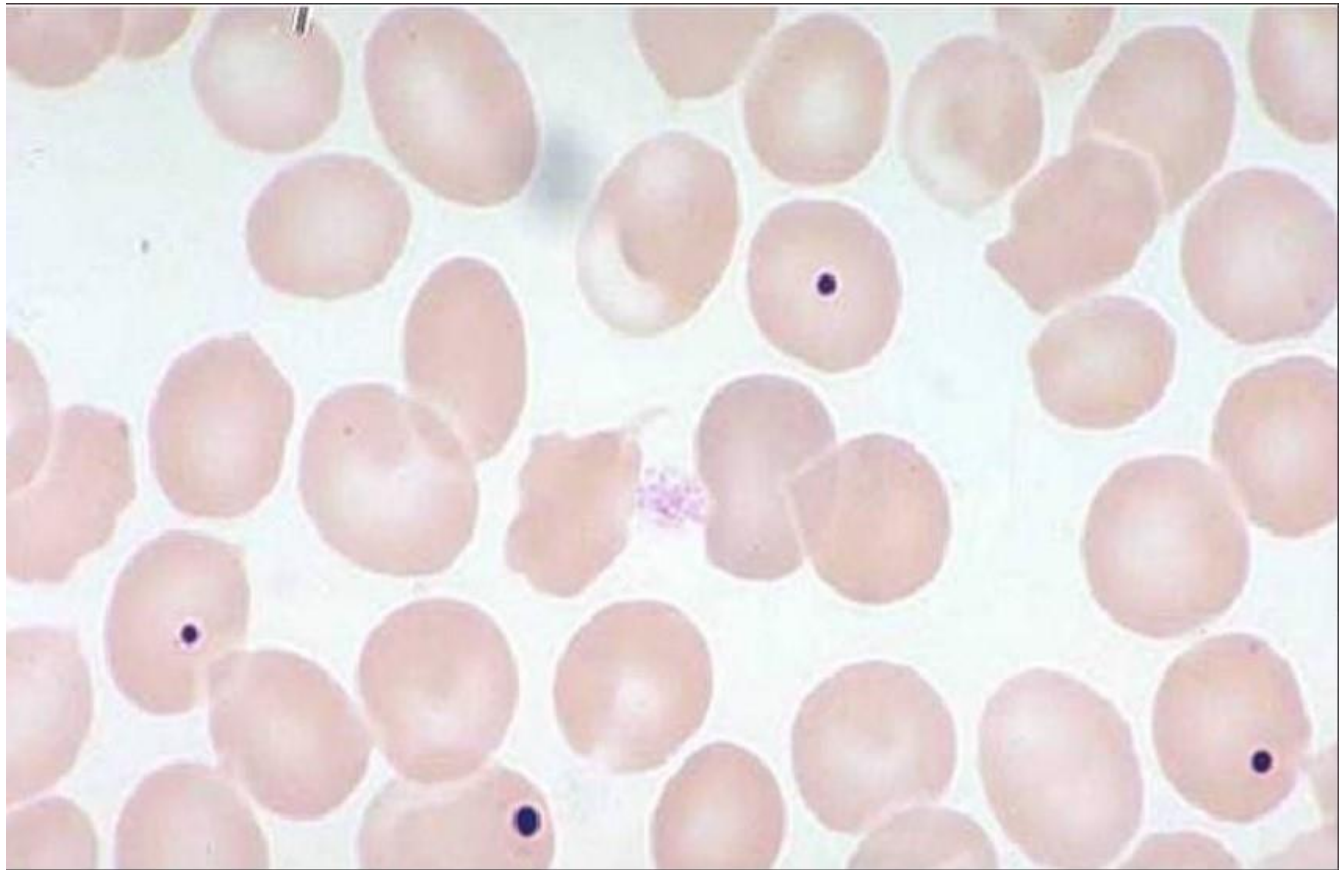
Eritrositler

- İnklüzyon

Common RBC Inclusions	Cartoon Image	Inclusion	May be associated with
Howell Jolly Bodies		DNA	Hyposplenism Asplenism Severe hemolytic anemia
Heinz Bodies		Hemoglobin	G6PD deficiency Oxidant drugs Unstable hemoglobin
Pappenheimer Bodies		Iron deposits	Thalassemia Sideroblastic anemia Hemolytic anemia Post-splenectomy
Hemoglobin H Inclusion		Hemoglobin	Hemoglobin H disease
Basophilic Stippling		Ribosomes	Lead poisoning Thalassemia Sickle cell anemia MDS

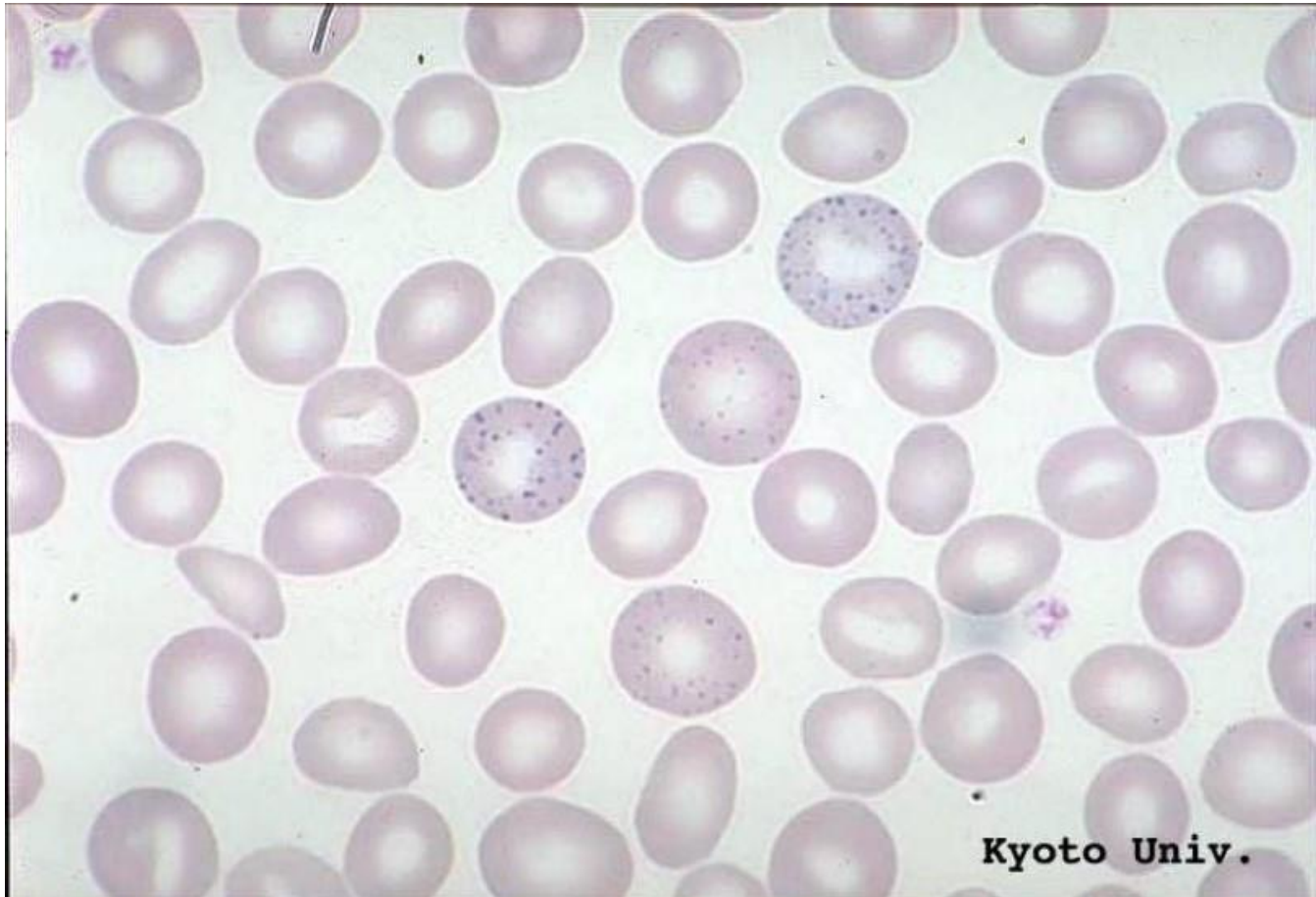
Eritrositler

- Howell-Jolly



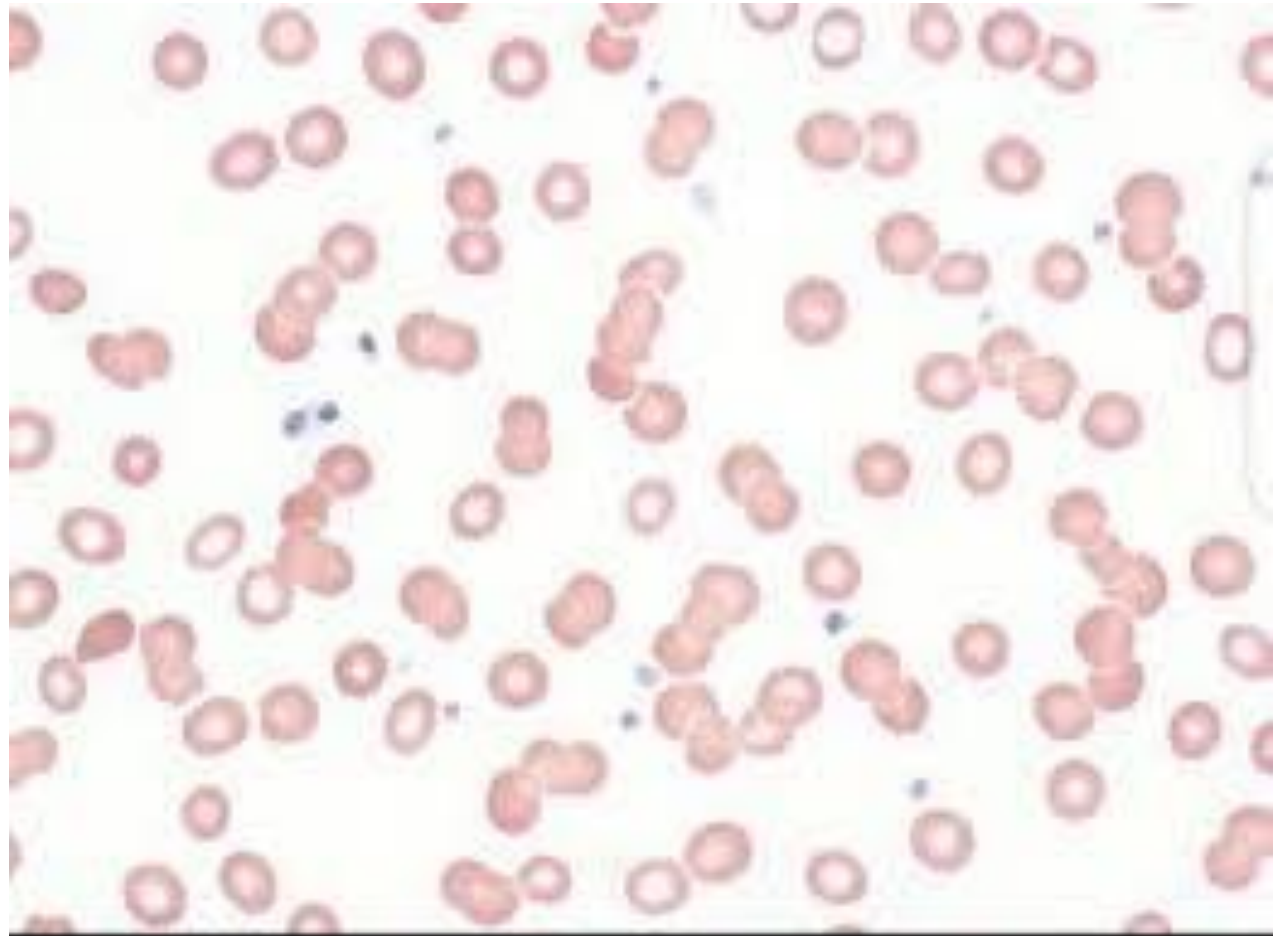
Eritrositler

- Bazofilik Noktalanma



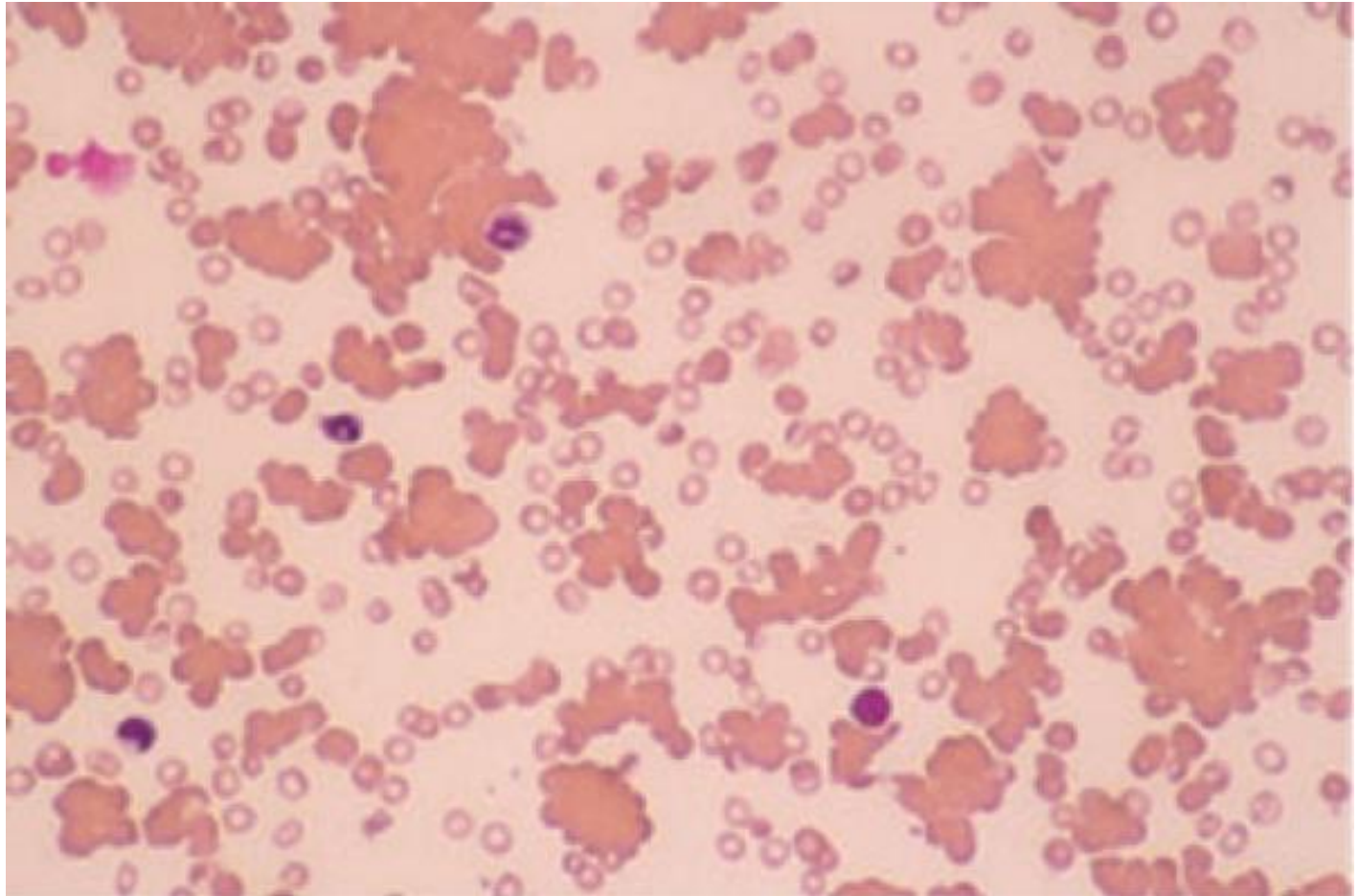
Eritrositler

- Rouleaux



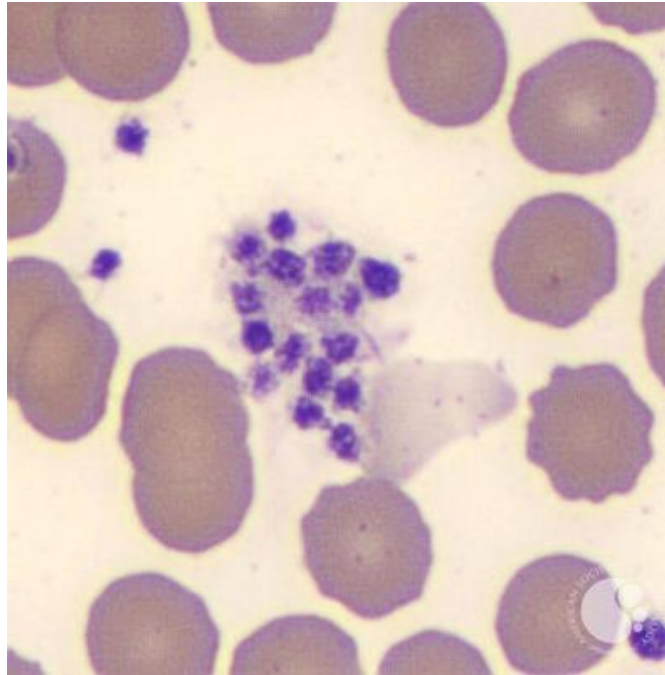
Eritrositler

- Aglütinasyon



Trombositler

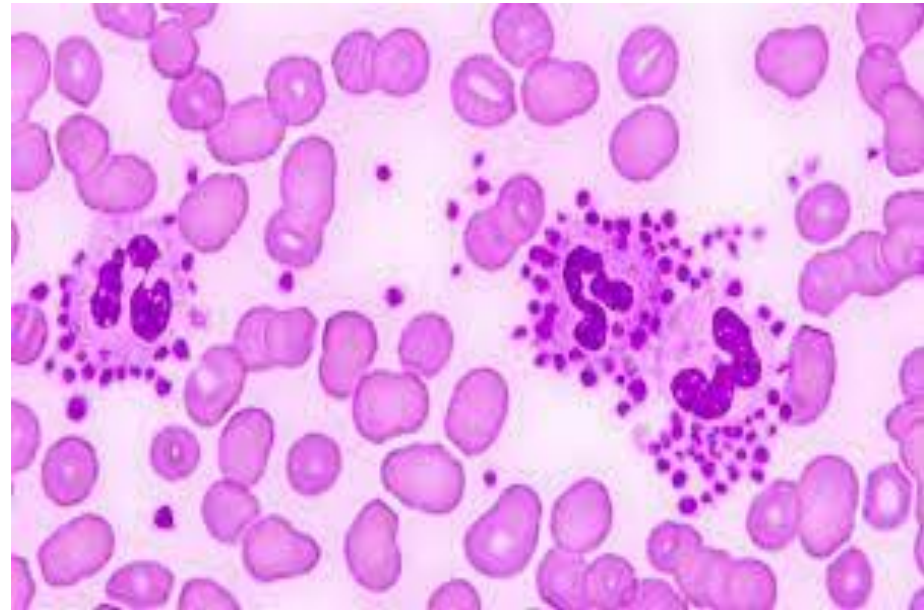
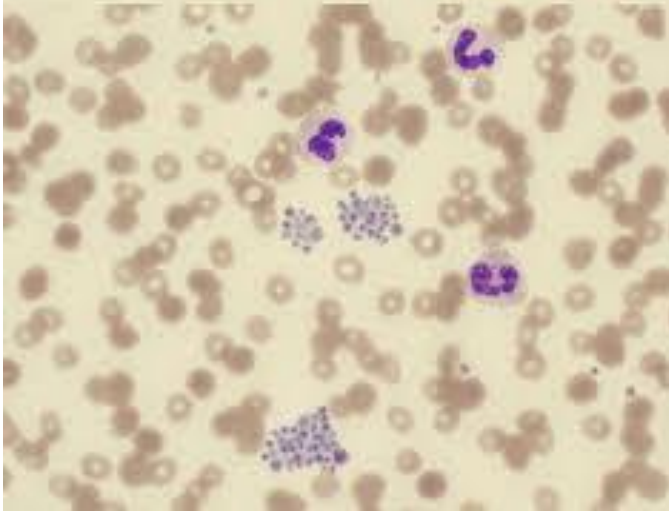
- Sayı (En az 5 alan ortalaması)
- Morfoloji
- Küme



Trombositler

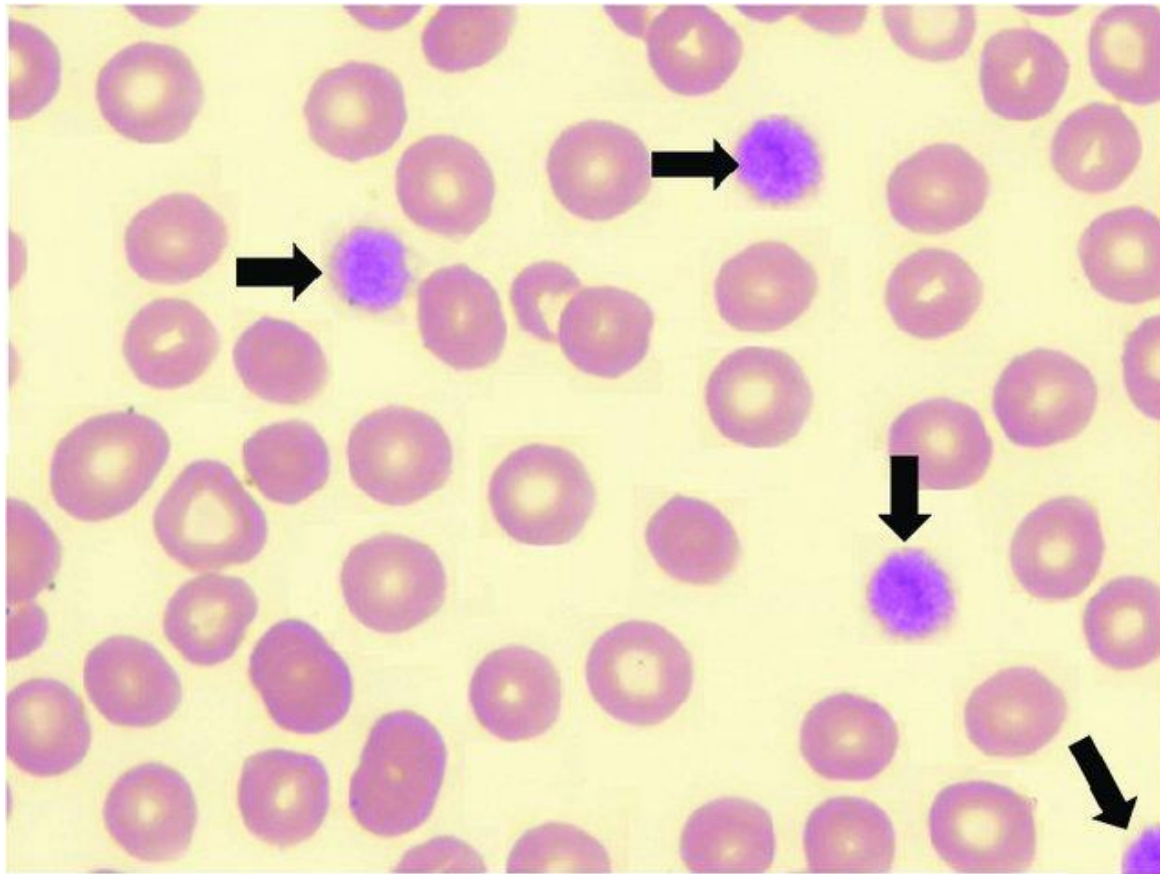
- Pseudotrombositopeni

EDTA dependent pseudothrombocytopenia



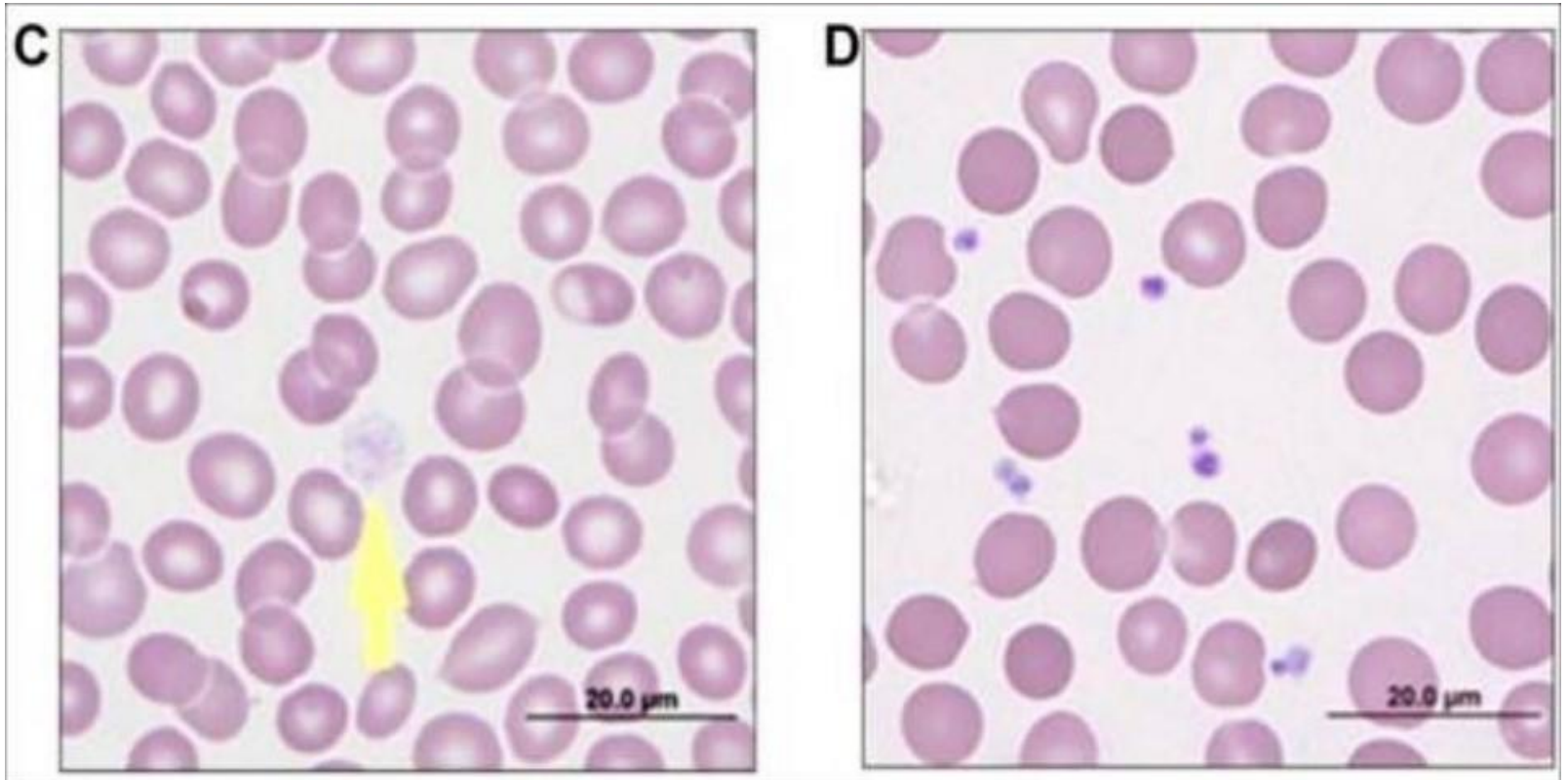
Trombositler

- Dev Trombosit

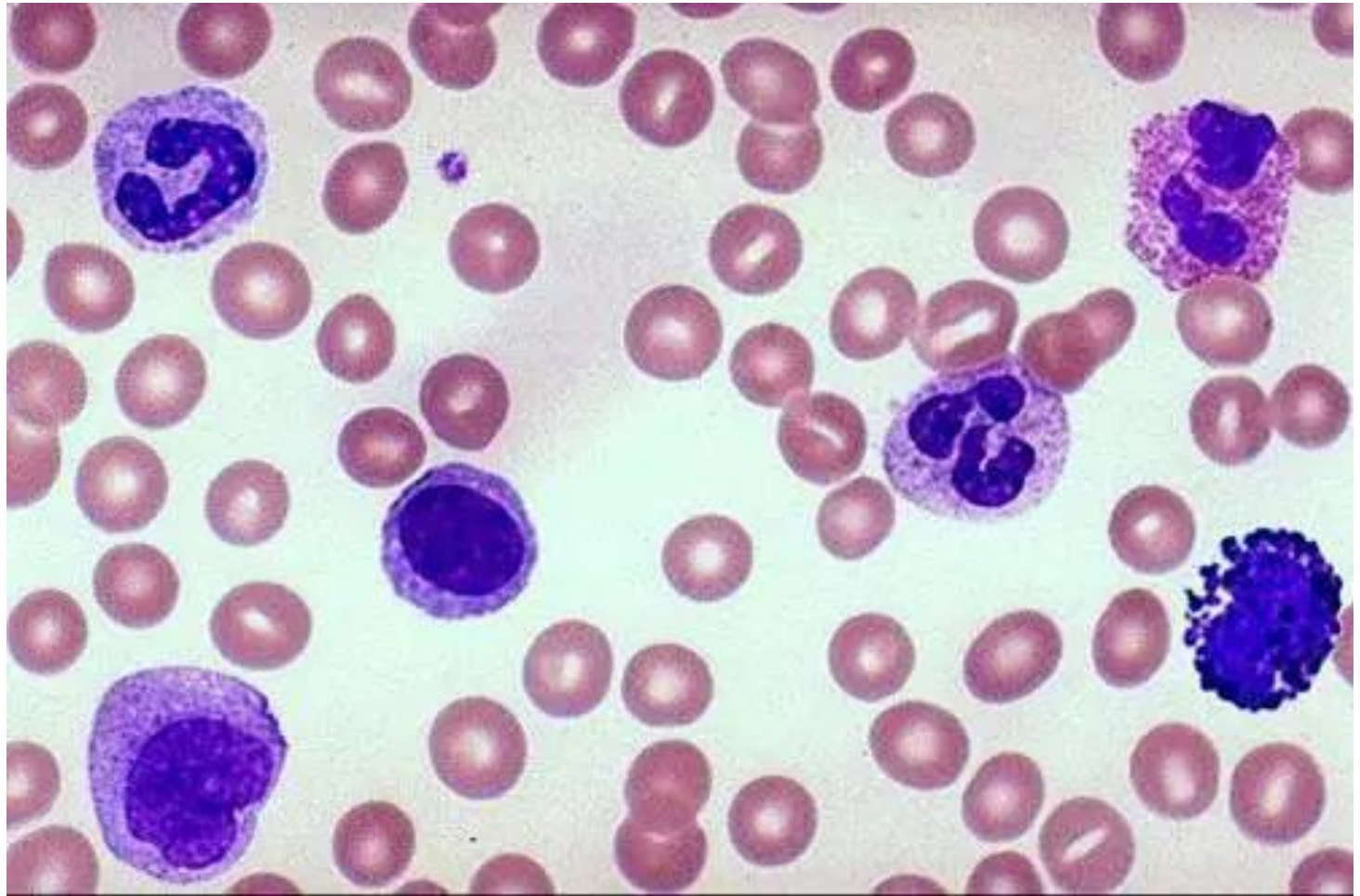


Trombositler

- Hipogranüle Trombosit / Normal



Lökositler

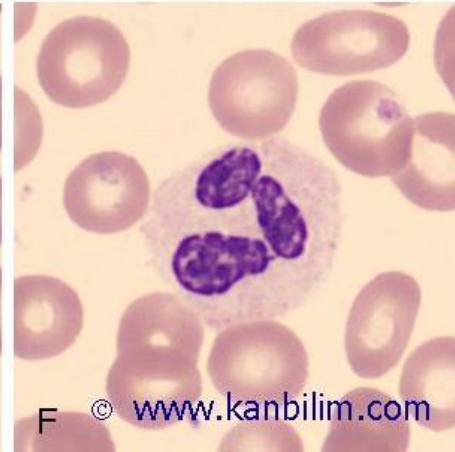
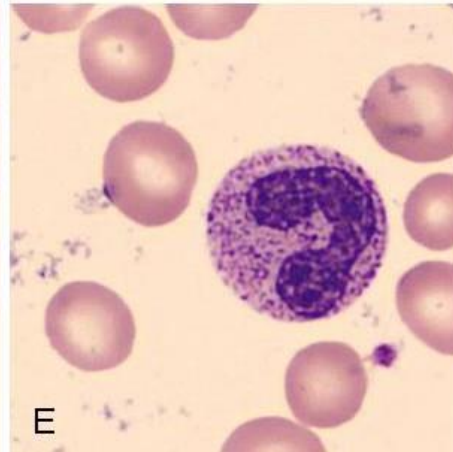
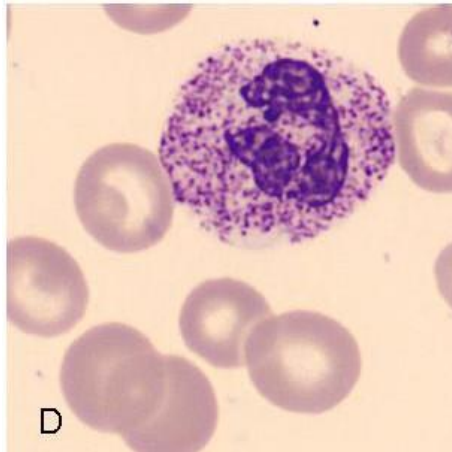
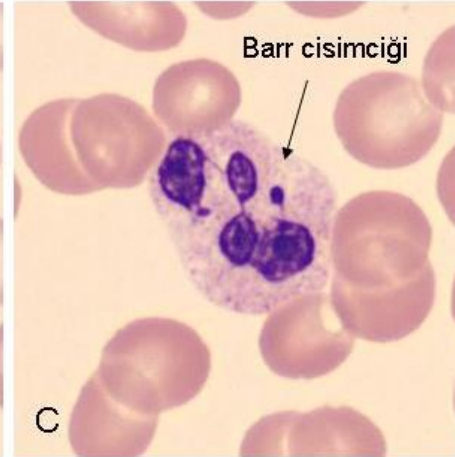
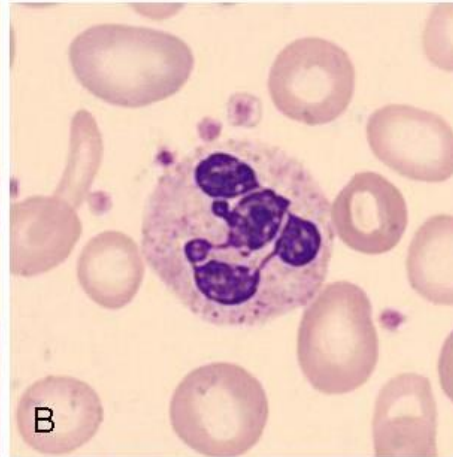
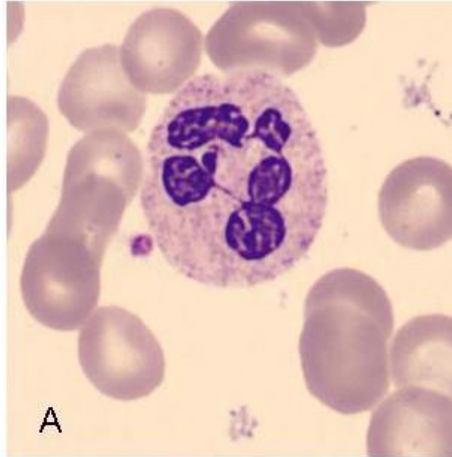


Lökositler

- Granülositler
- Granül boyanma karakteri hücreyi belirler
- Hiper/hipopigmentasyon
- Hiper/hiposegmentasyon
- Nükleer Anomali?

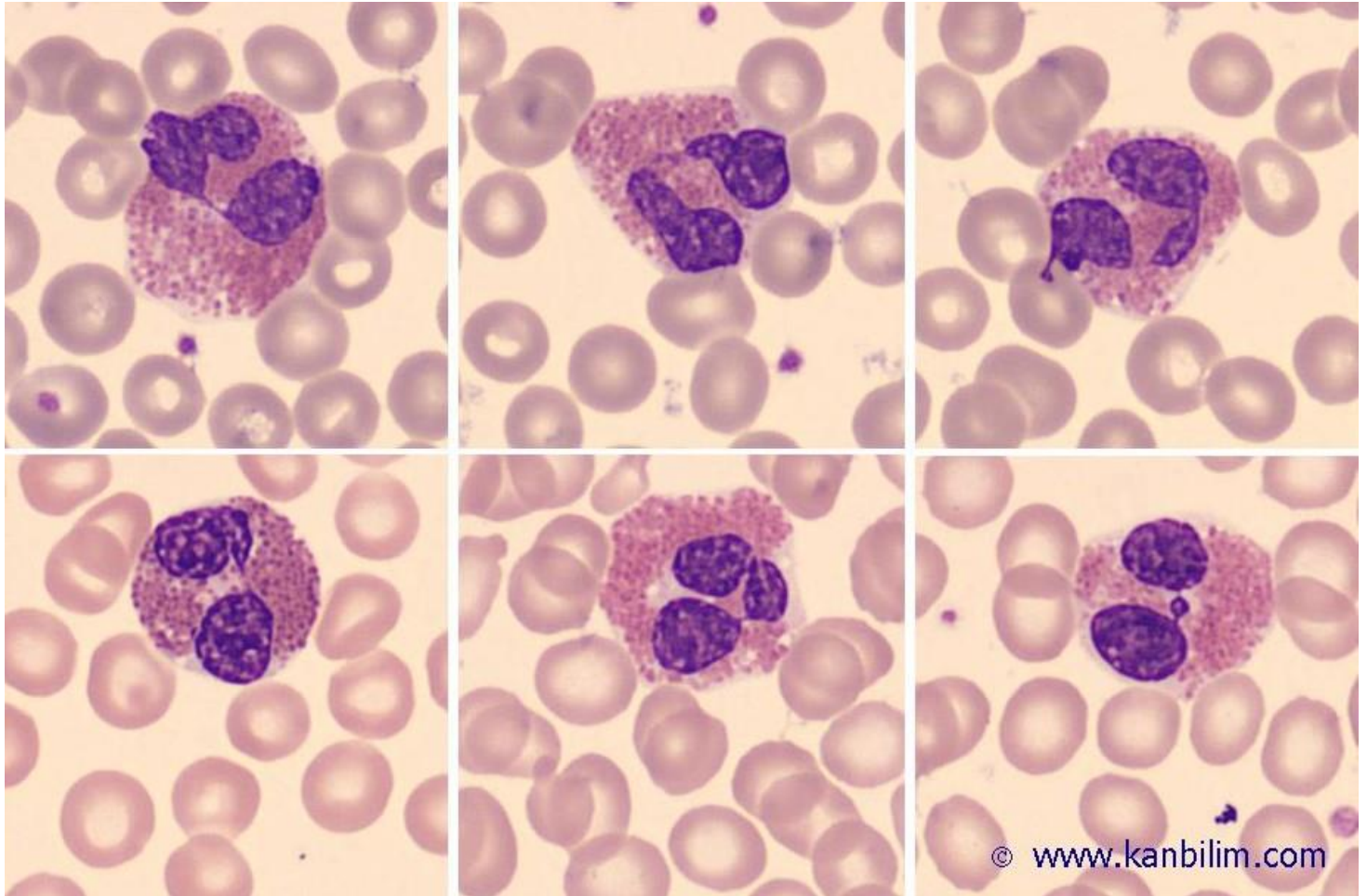
Lökositler

- Nötrofil (D-E Toks Gr E Band F Hipogr)



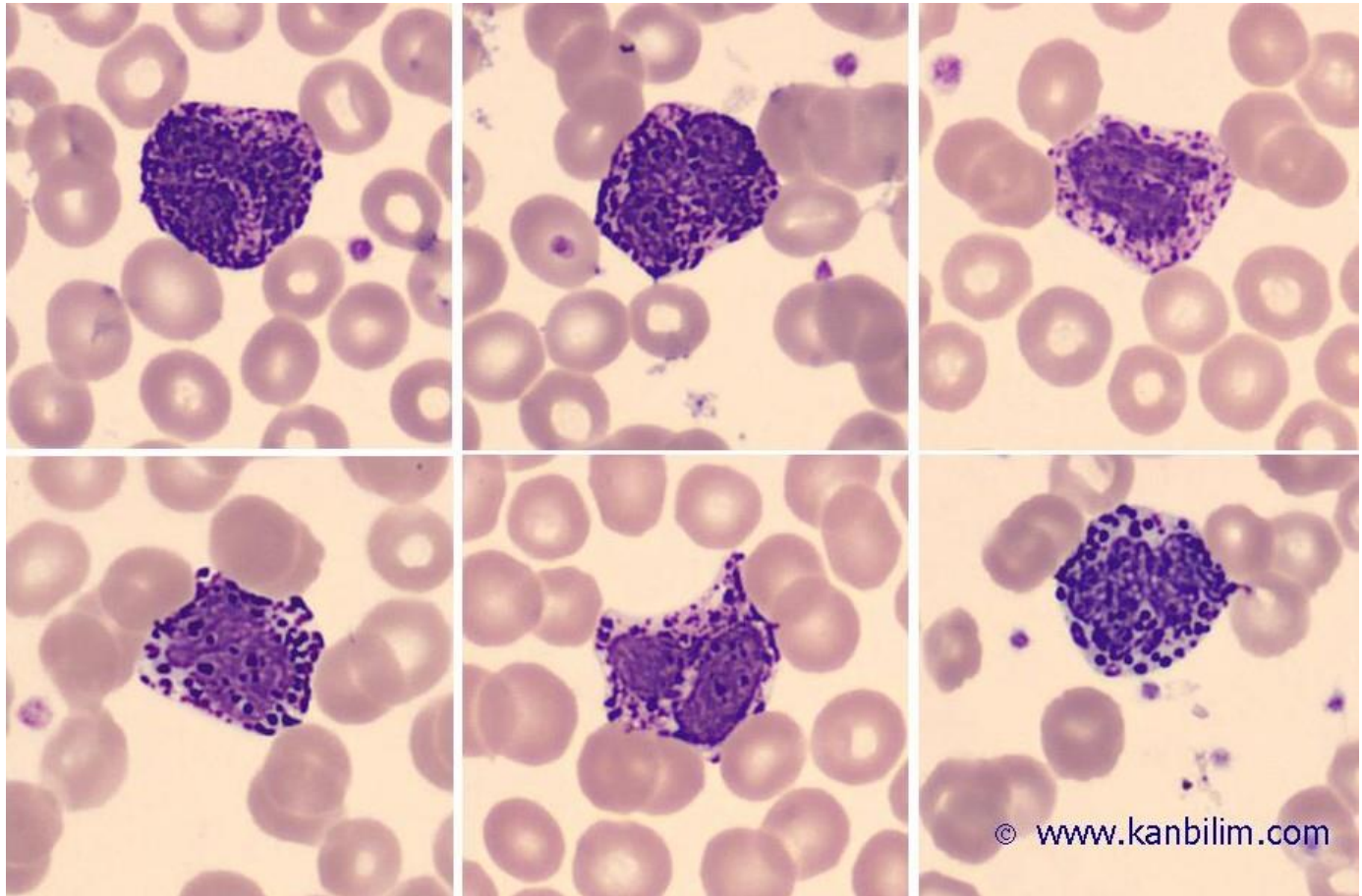
Lökositler

- Eozinofil



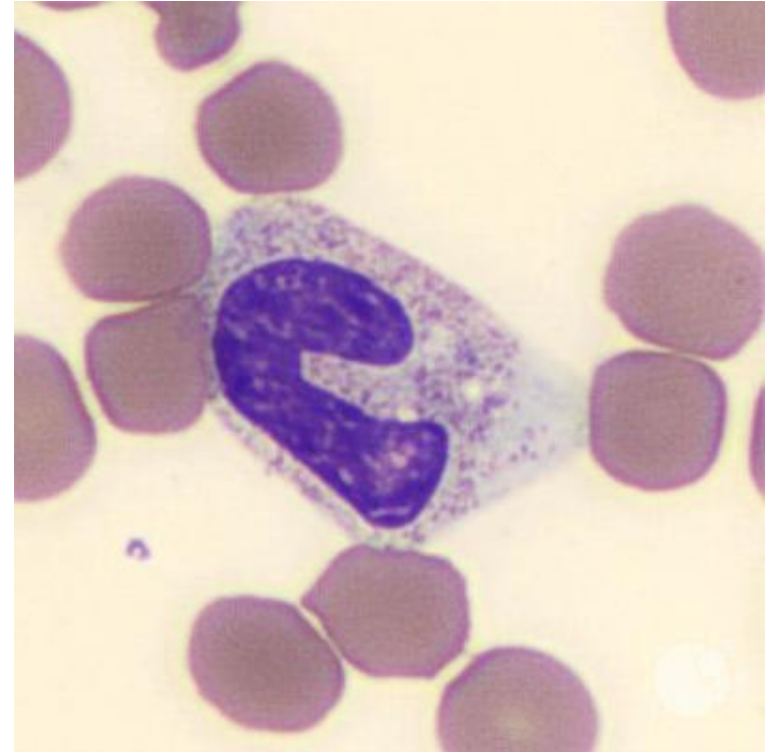
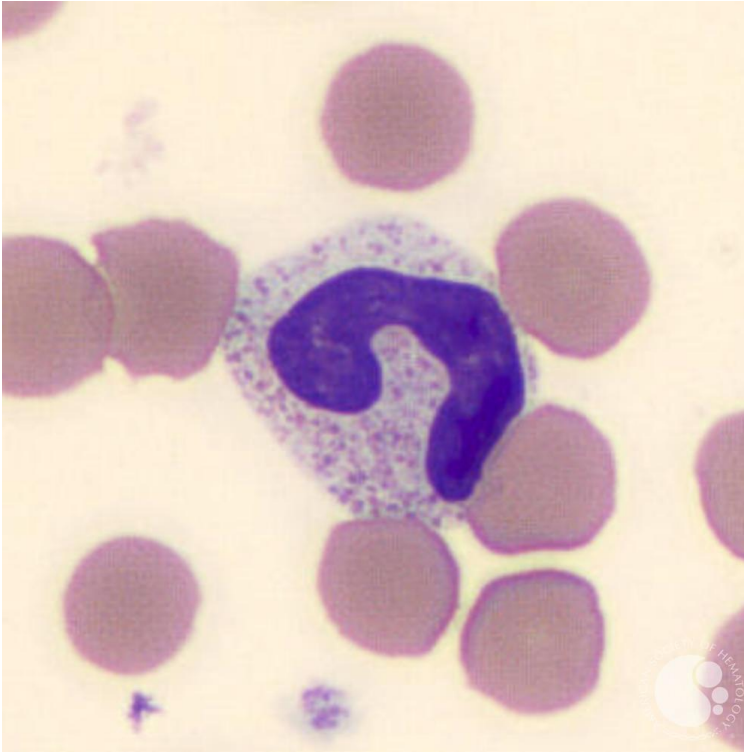
Lökositler

- Bazofil



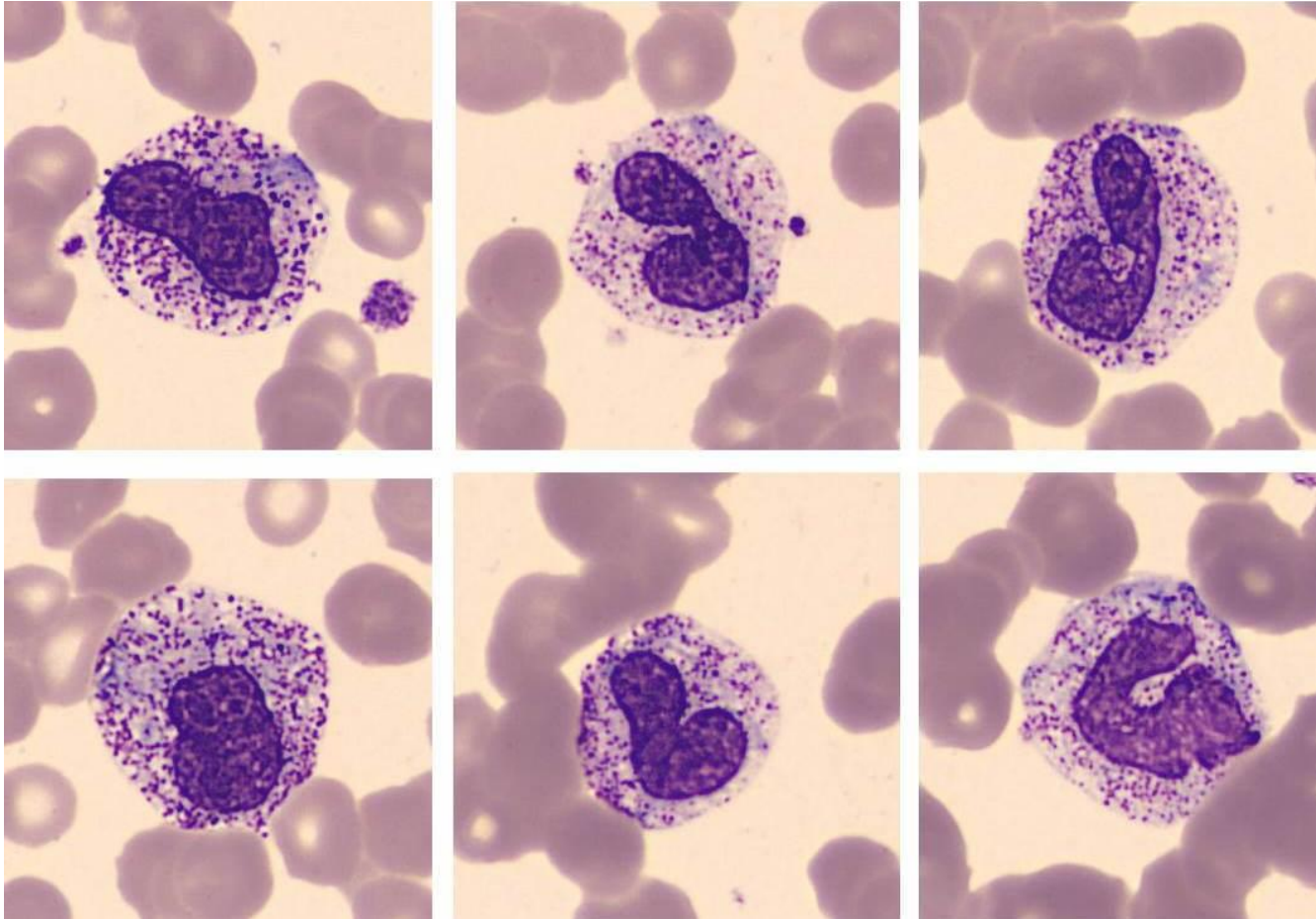
Lökositler

- Band/çomak



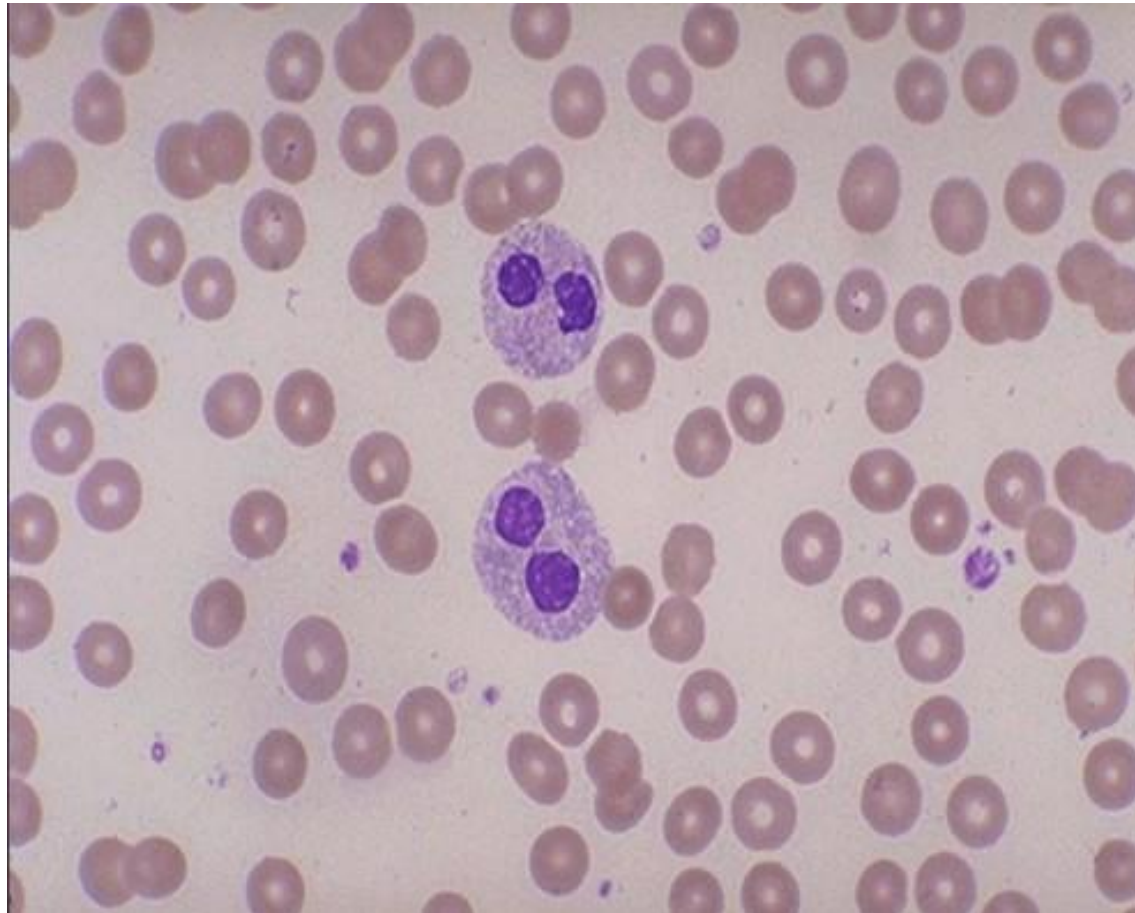
Lökositler

- Toksik Granülasyon / Vakuolizasyon



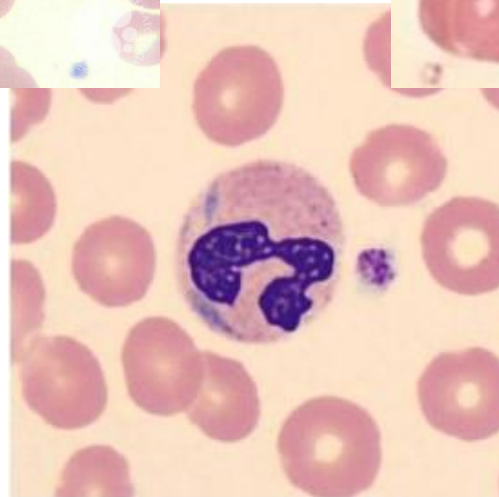
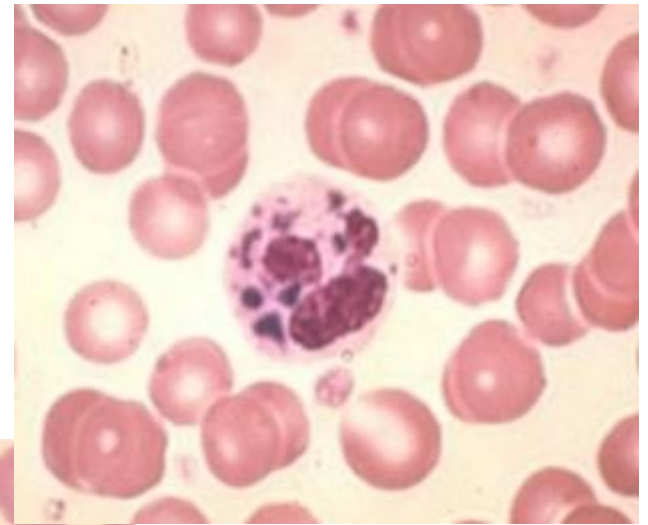
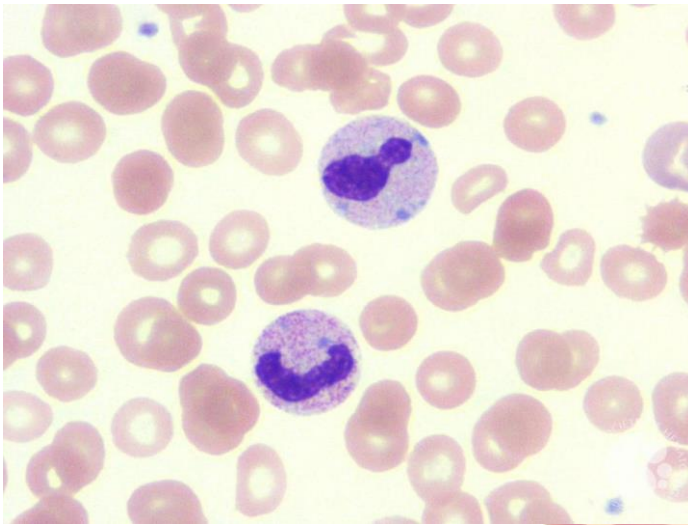
Lökositler

- Pelger-Huet



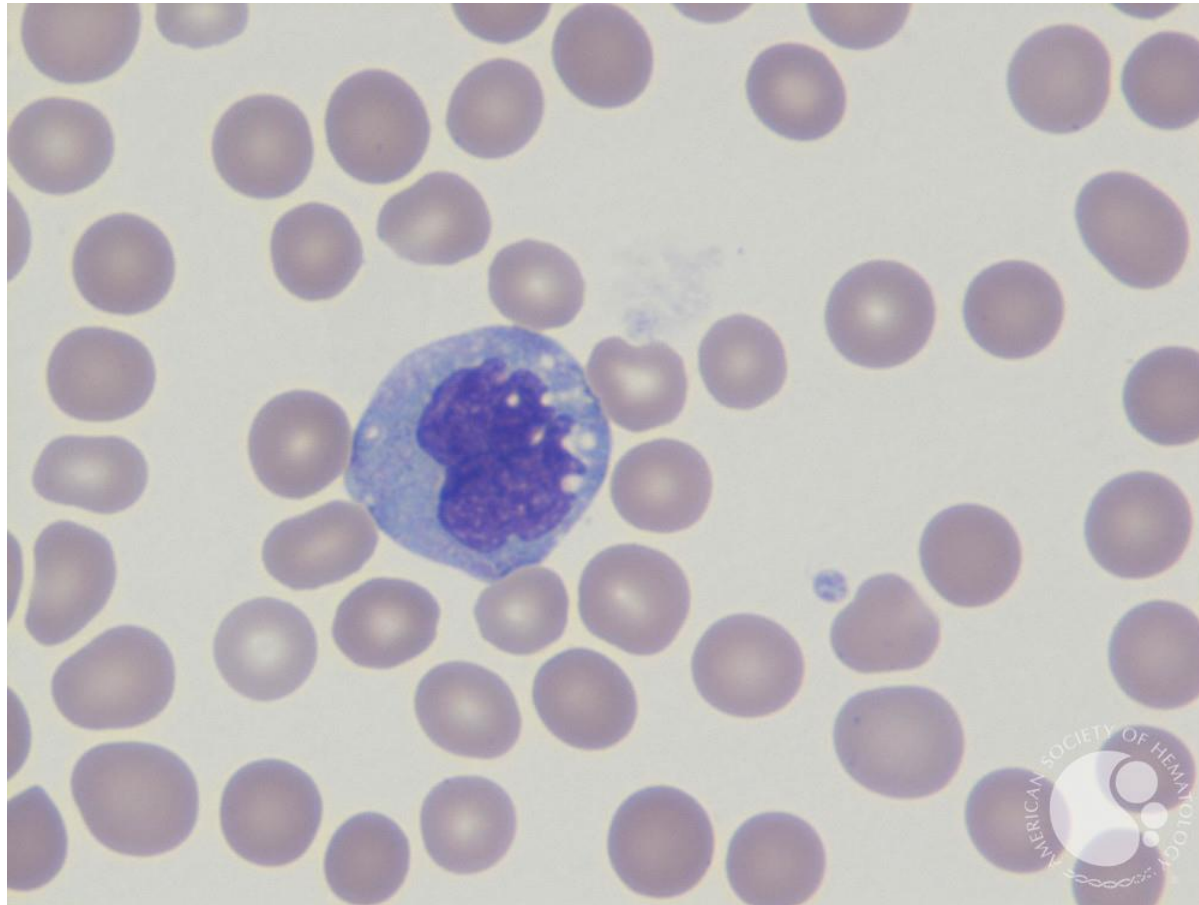
Lökositler

- **Atipik Nötrofiller** (Döhle /May Hegglin / Chediak Higashi)

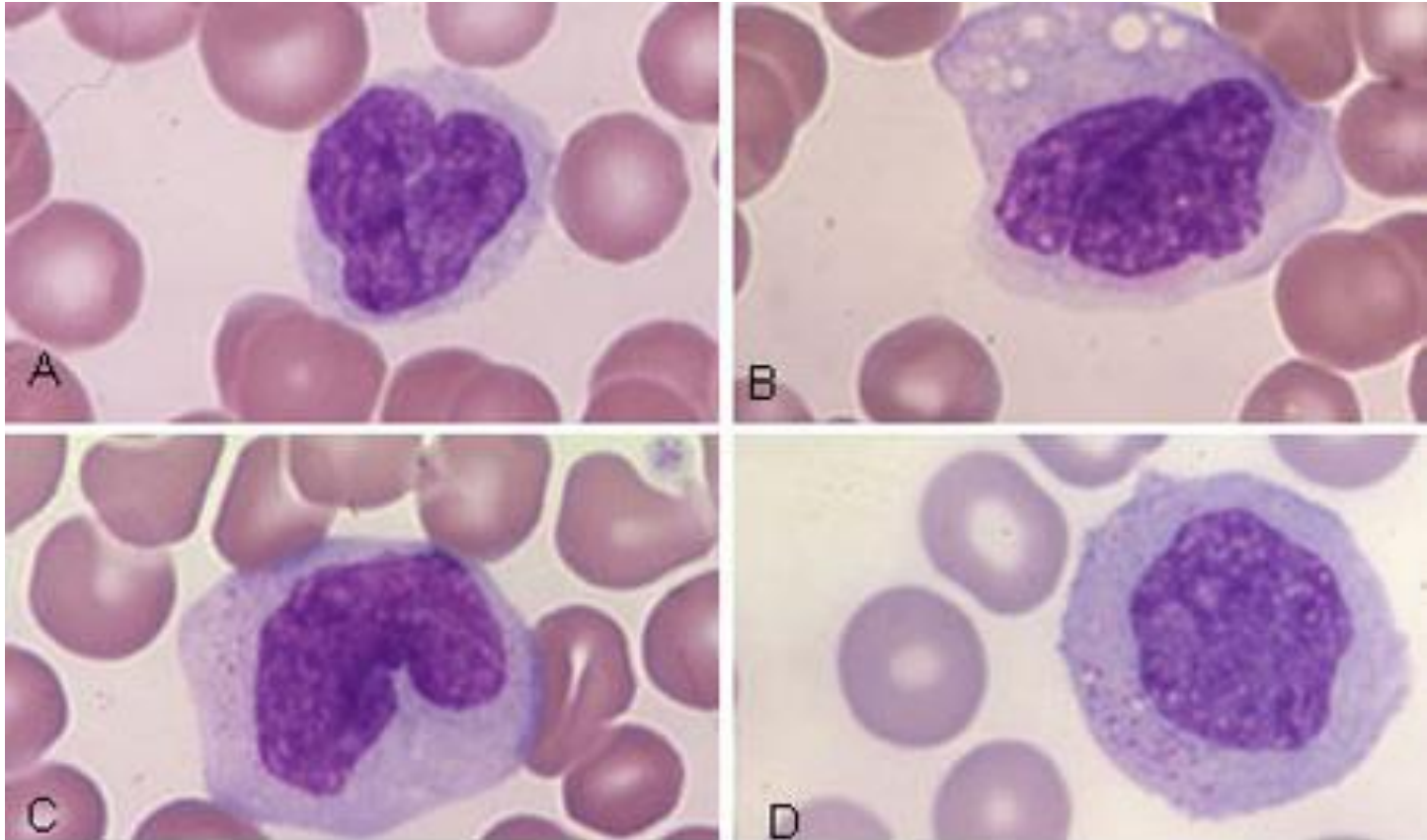


Lökositler

- Monosit



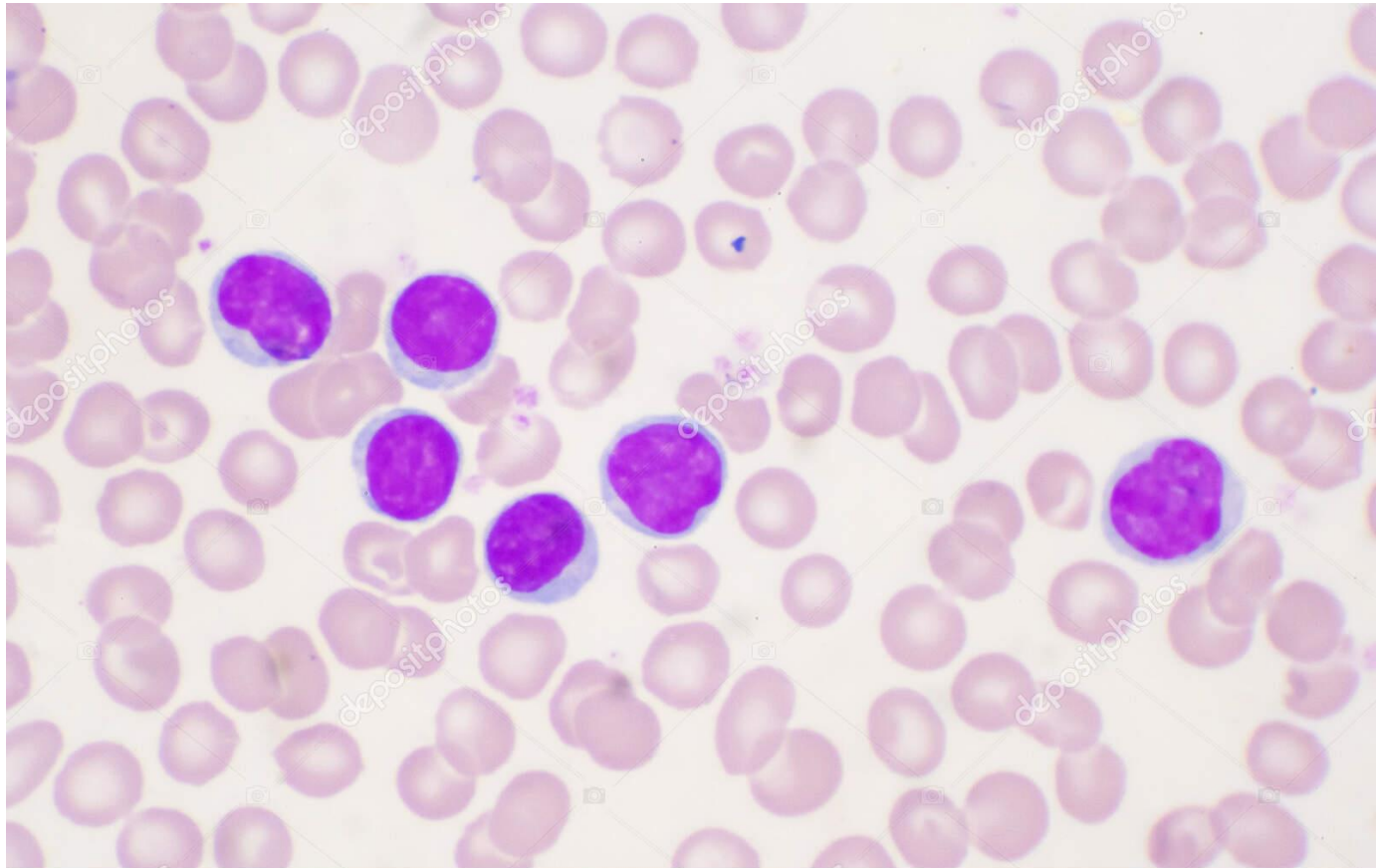
Lökositler



Source: Lichtman MA, Shafer MS, Felgar RE, Wang N:
Lichtman's Atlas of Hematology: <http://www.accessmedicine.com>
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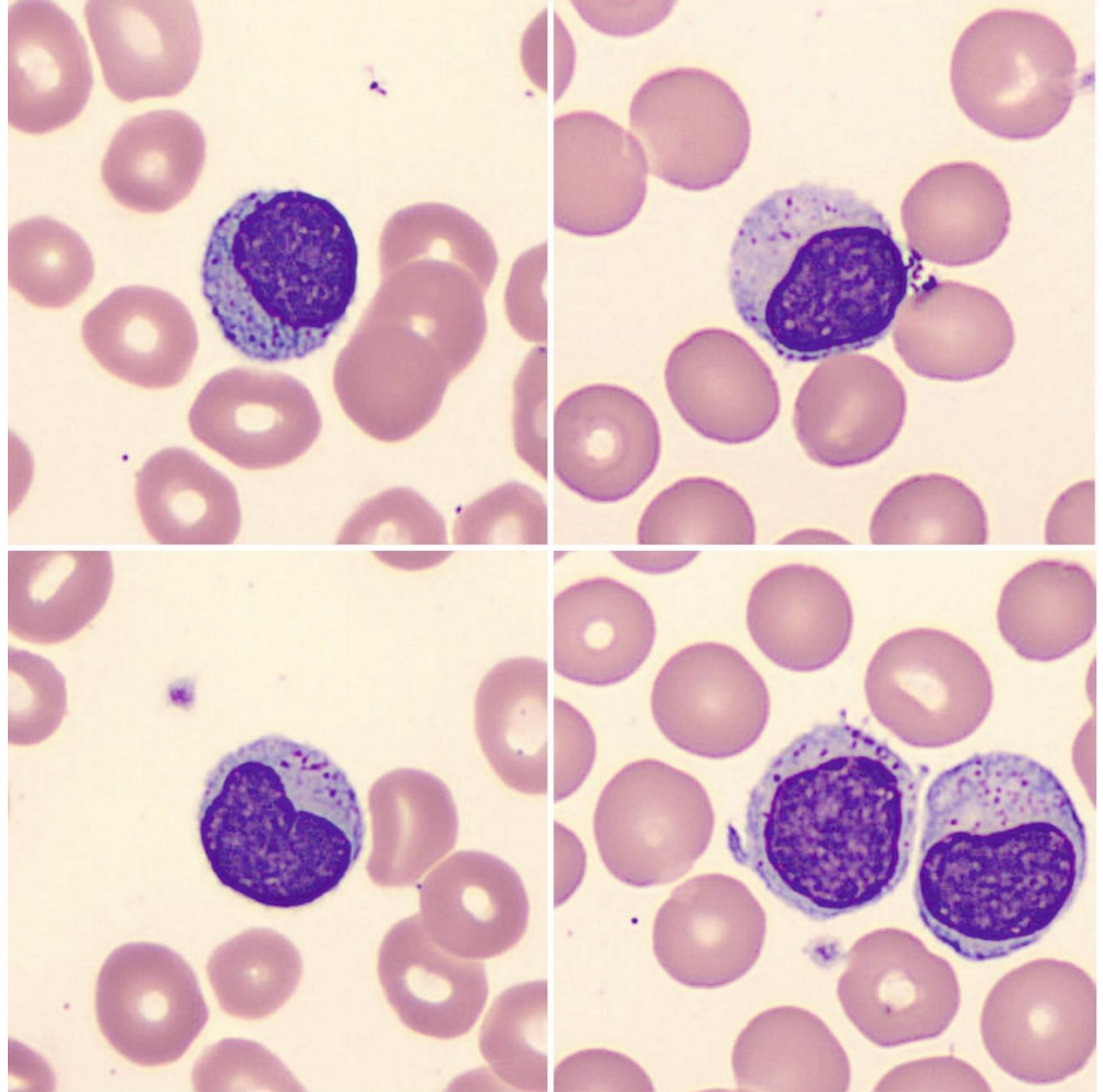
Lökositler

- Lenfosit



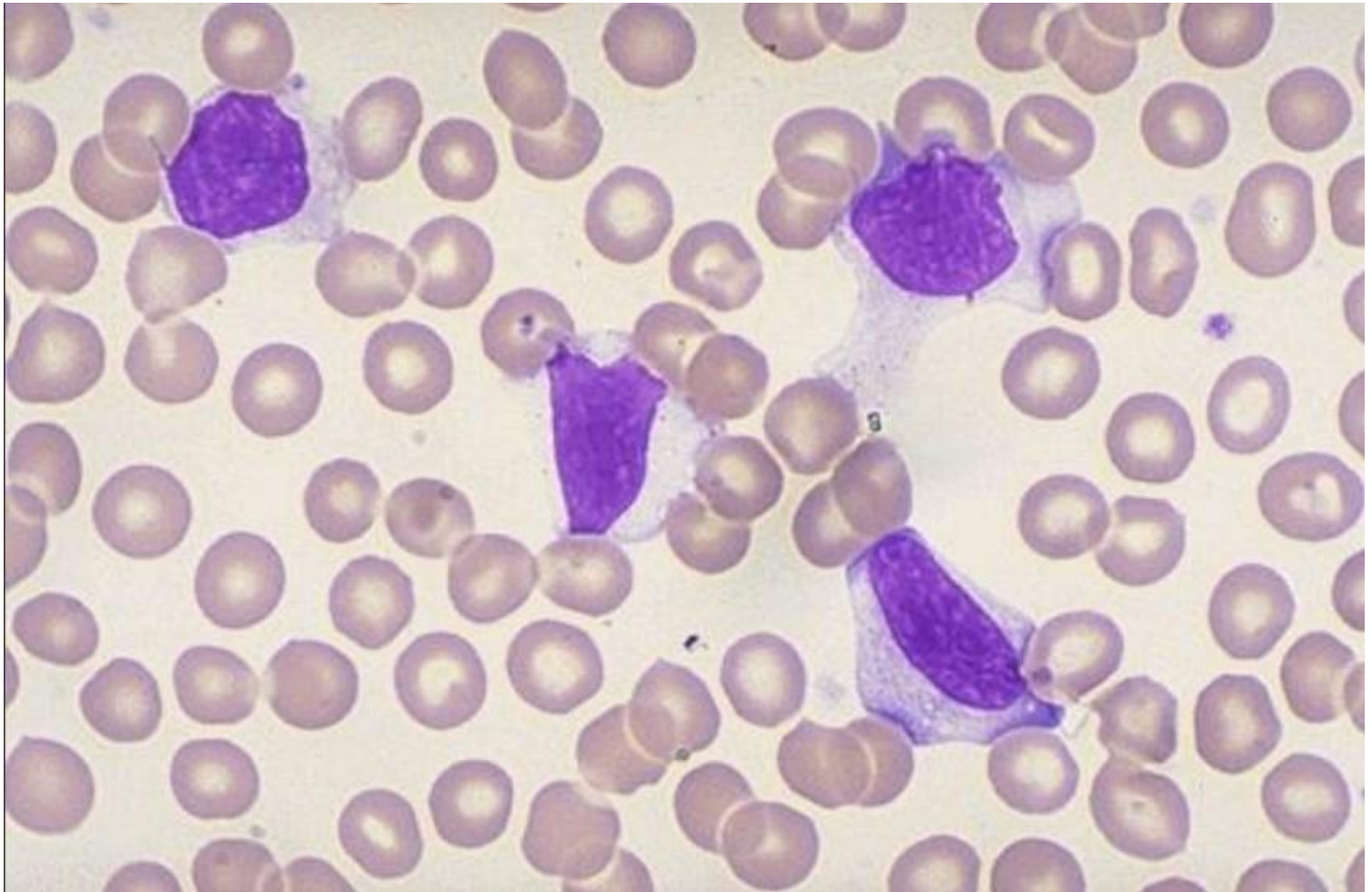
Lökositler

- LGL

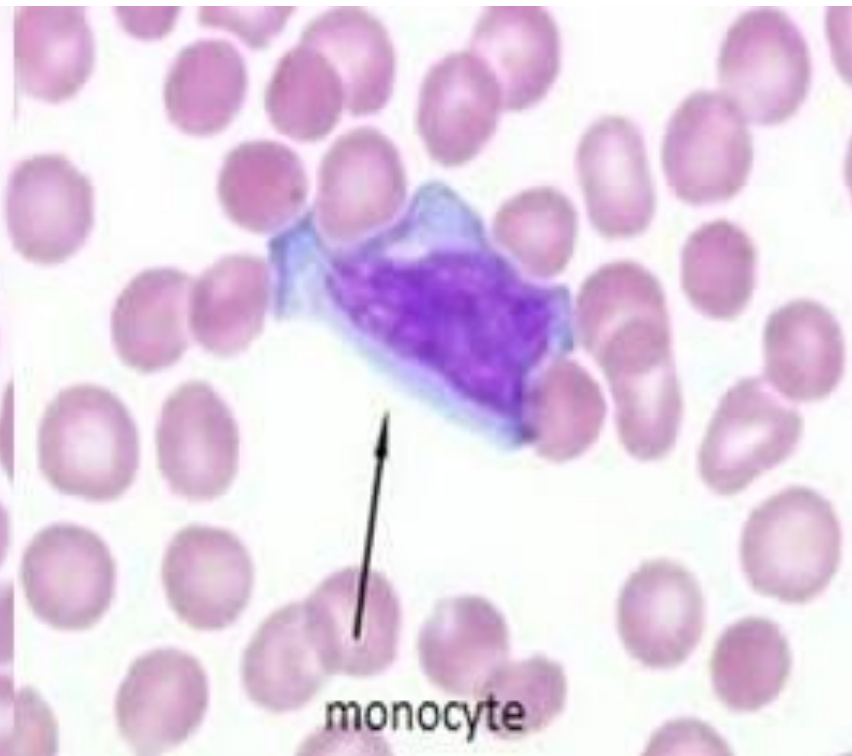
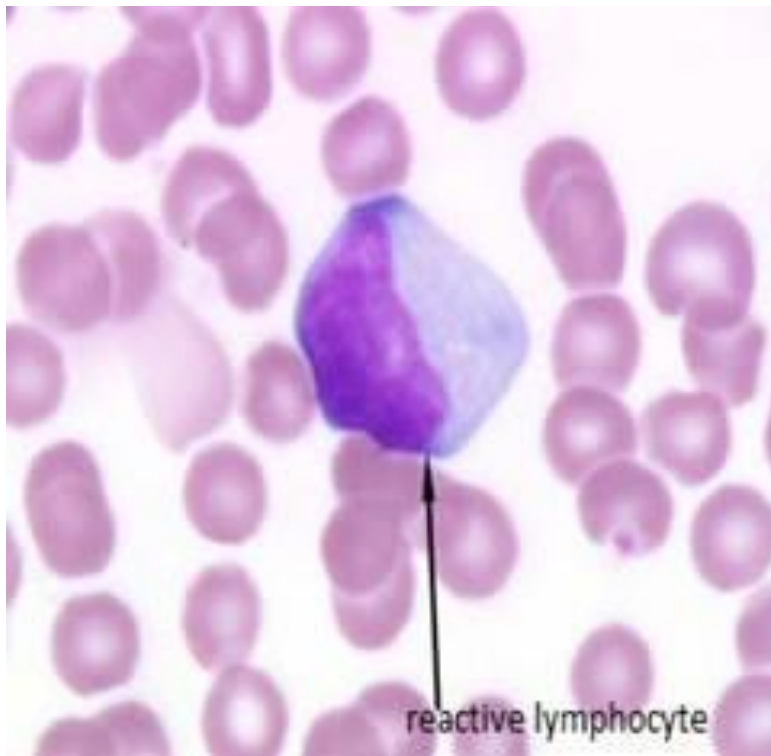


Lökositler

- Aktive (Atipik) Lenfosit

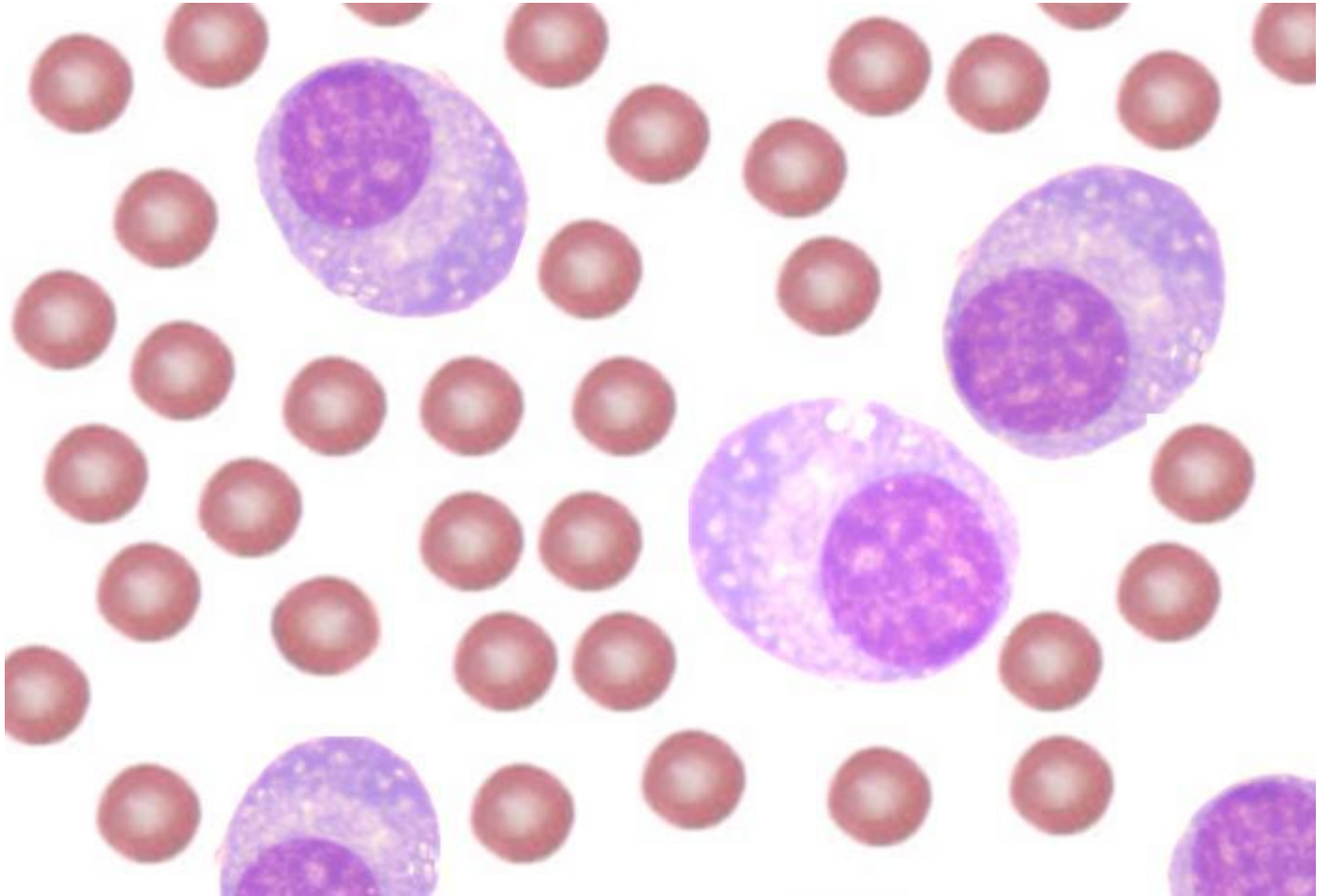


Lökositler



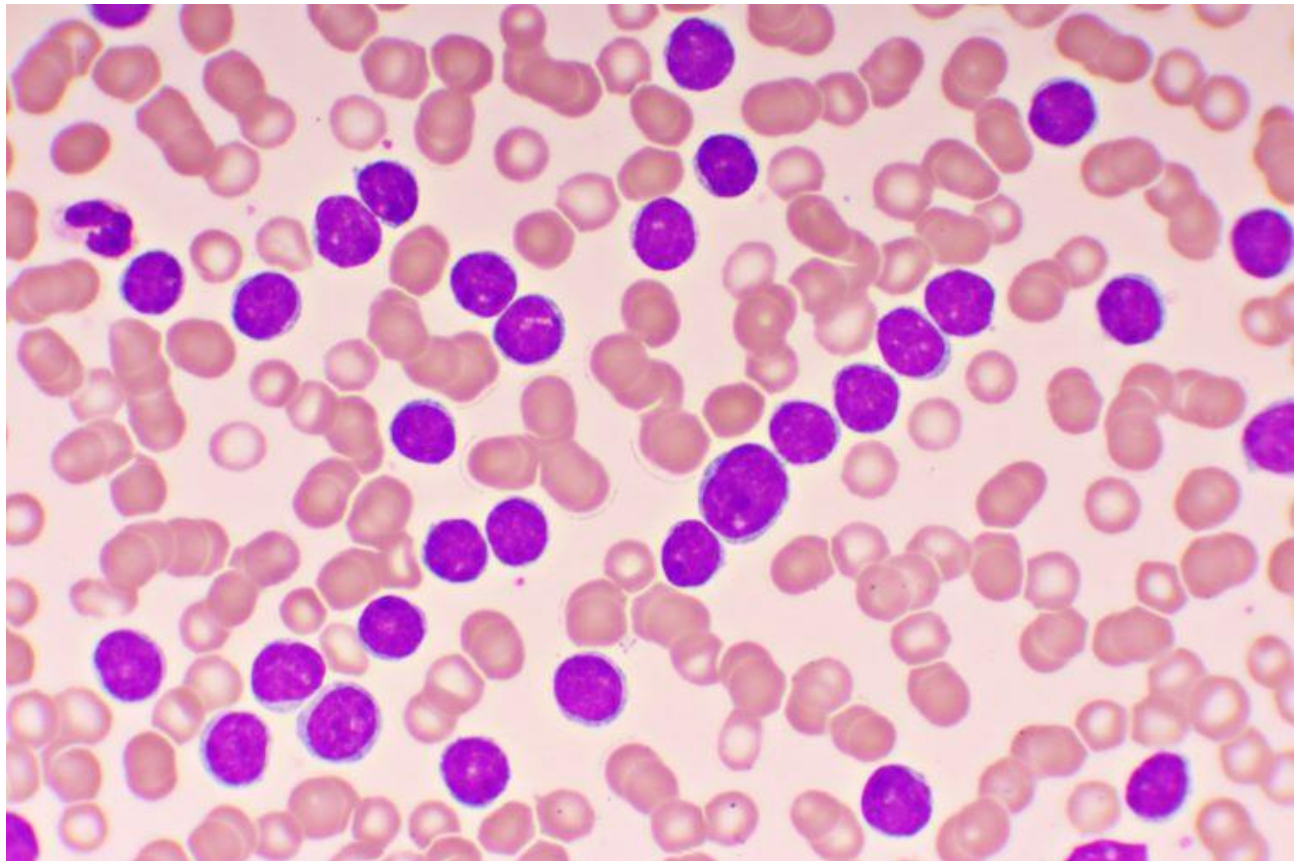
Lökositler

- Plazma Hücresi

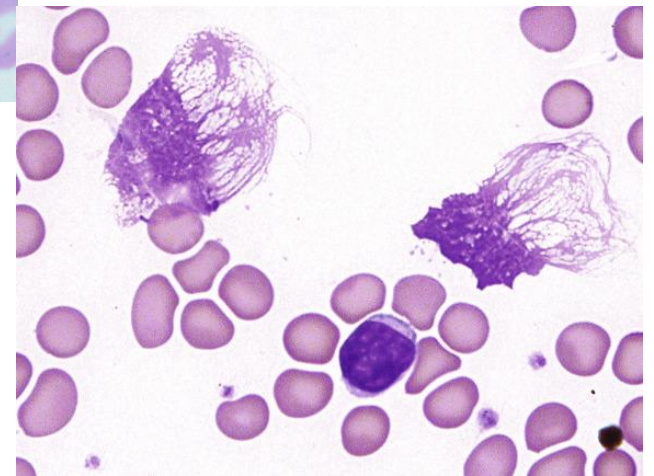
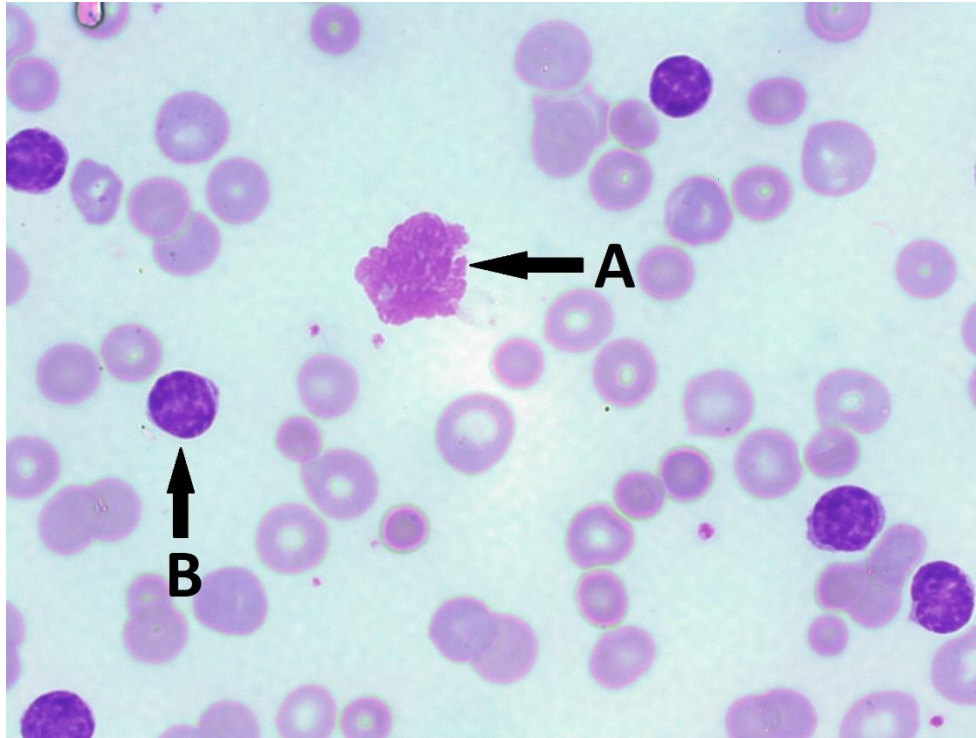


Öncüller, Hastalıklar

- KLL

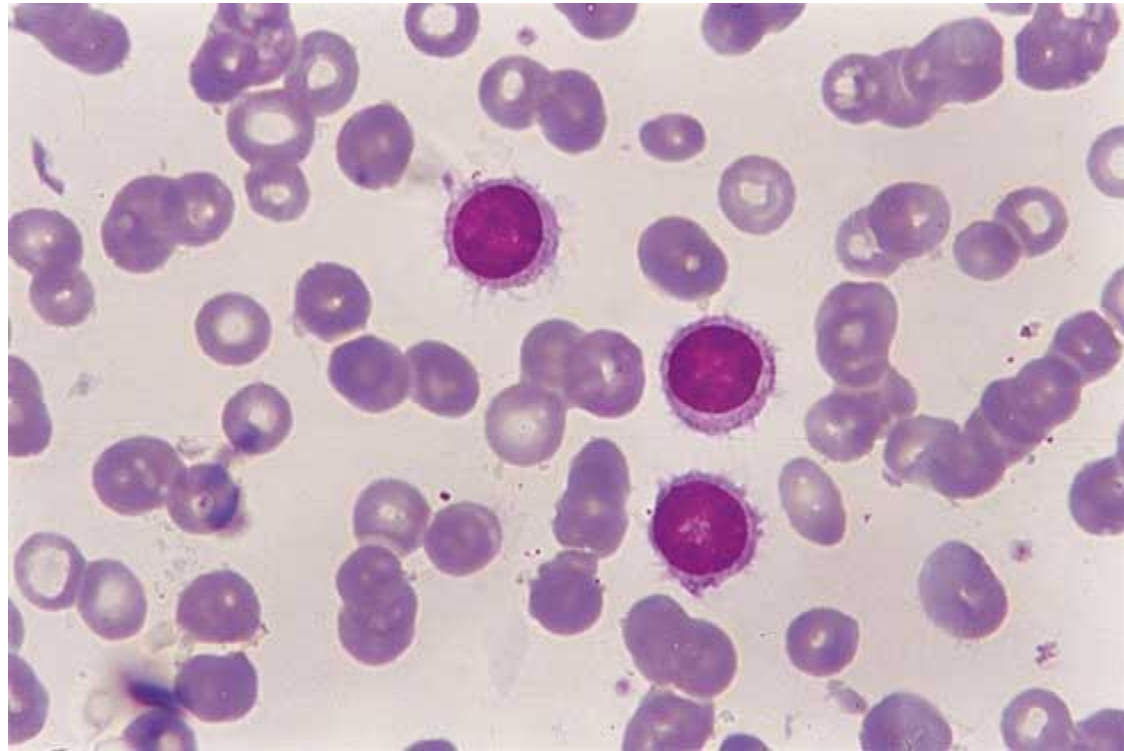


Öncüller, Hastalıklar



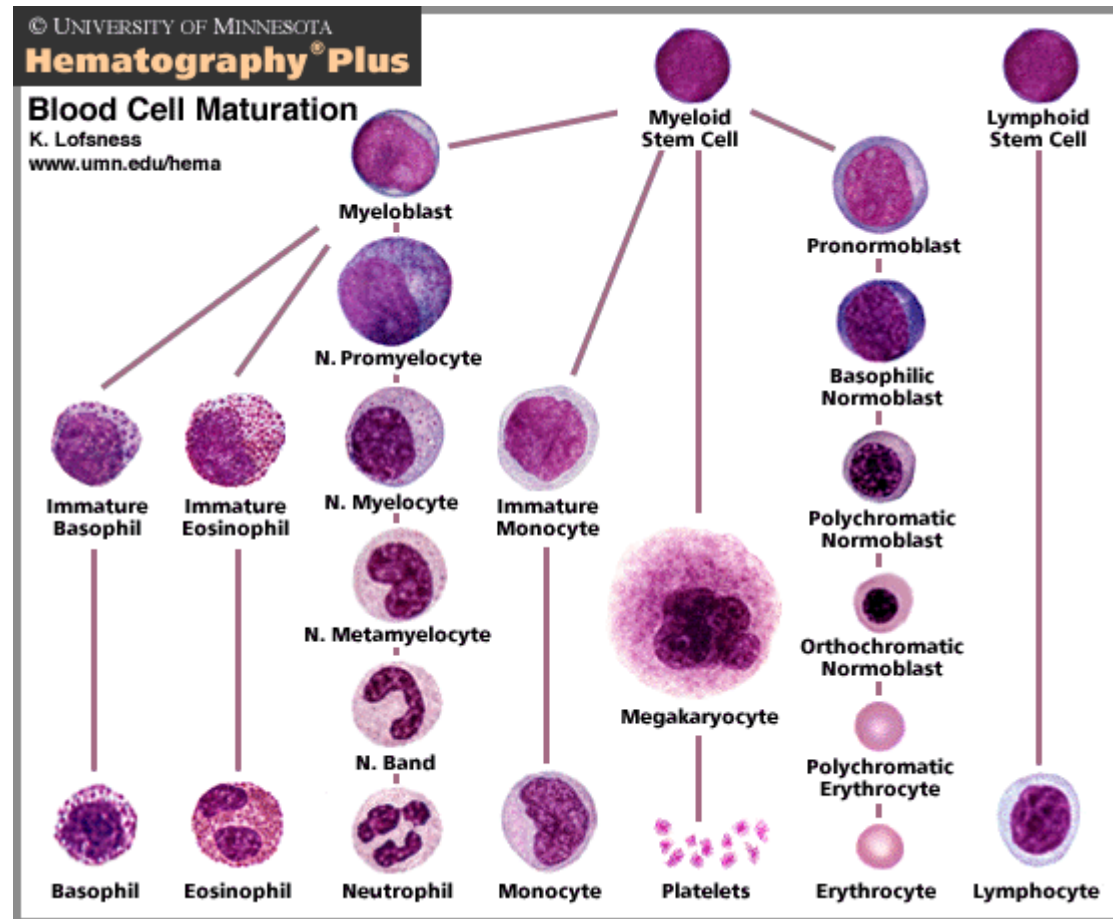
Öncüller, Hastalıklar

- Saçlı Hücreli Lösemi



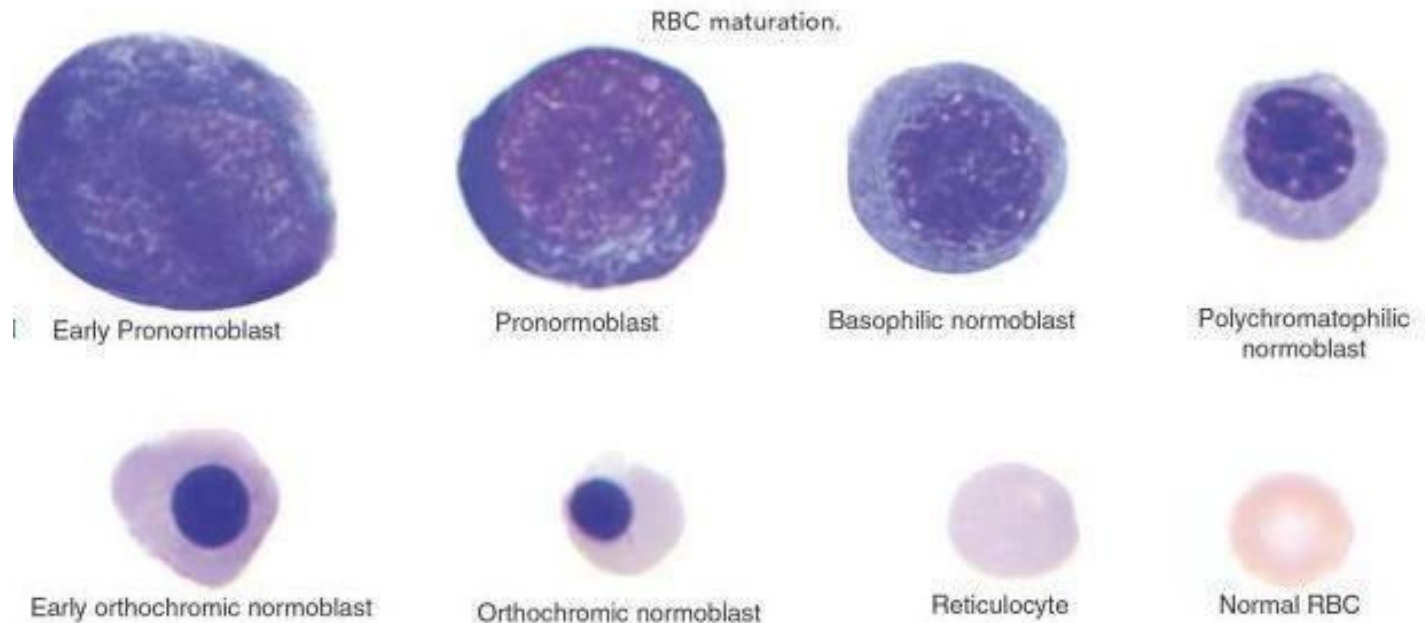
Öncüller, Hastalıklar

- Matürasyon



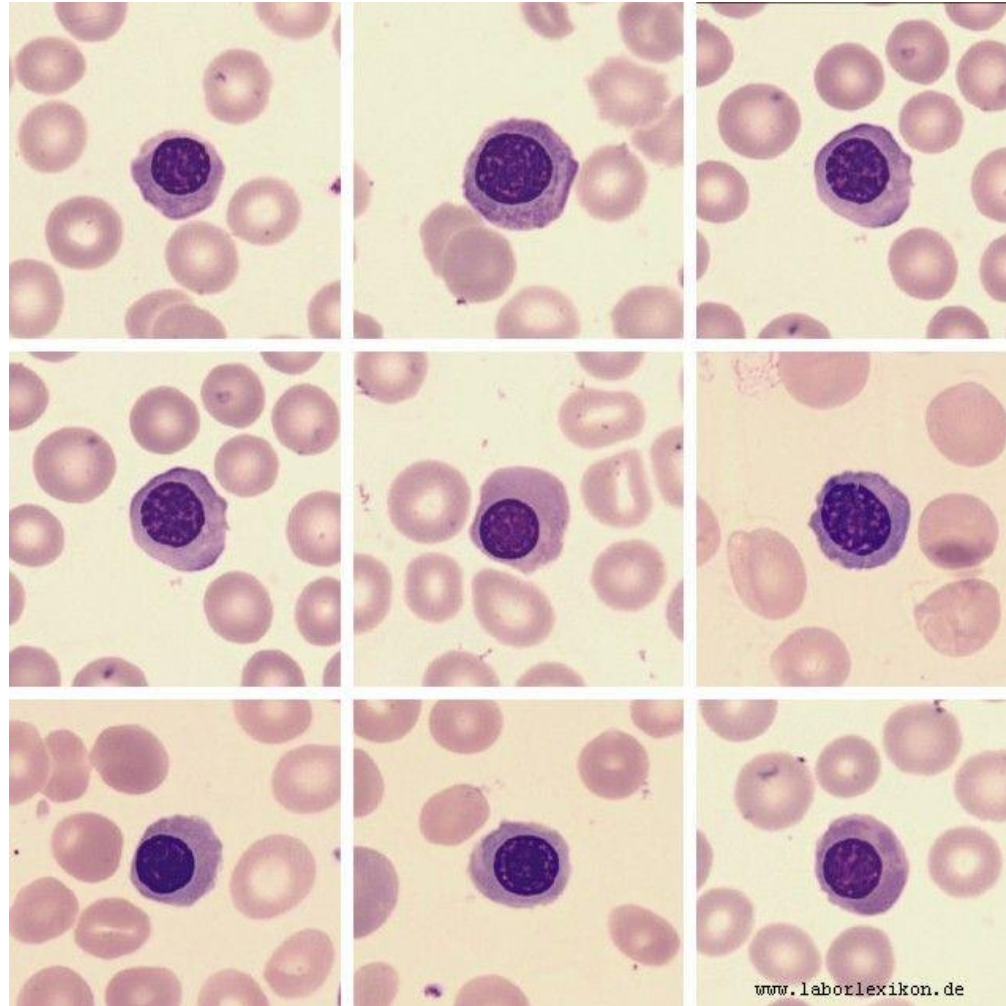
Öncüller, Hastalıklar

- Eritroid Öncüller



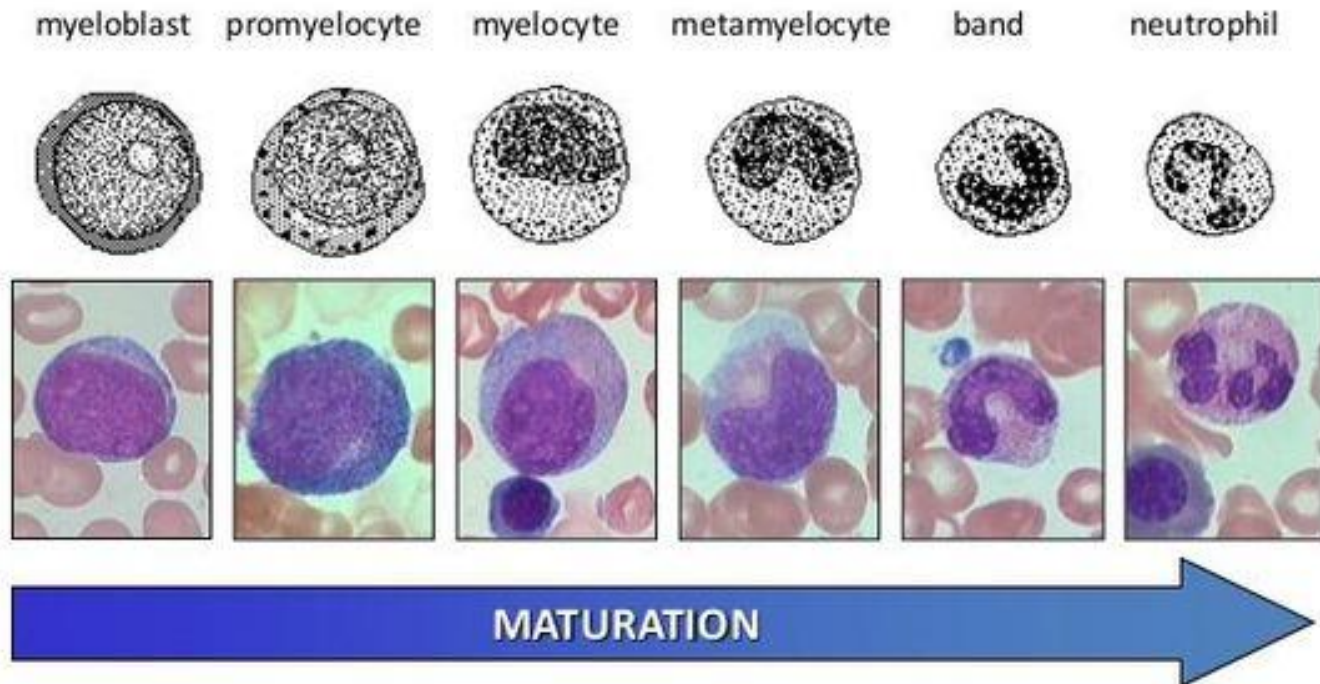
Öncüller, Hastalıklar

- Eritroid Öncüller



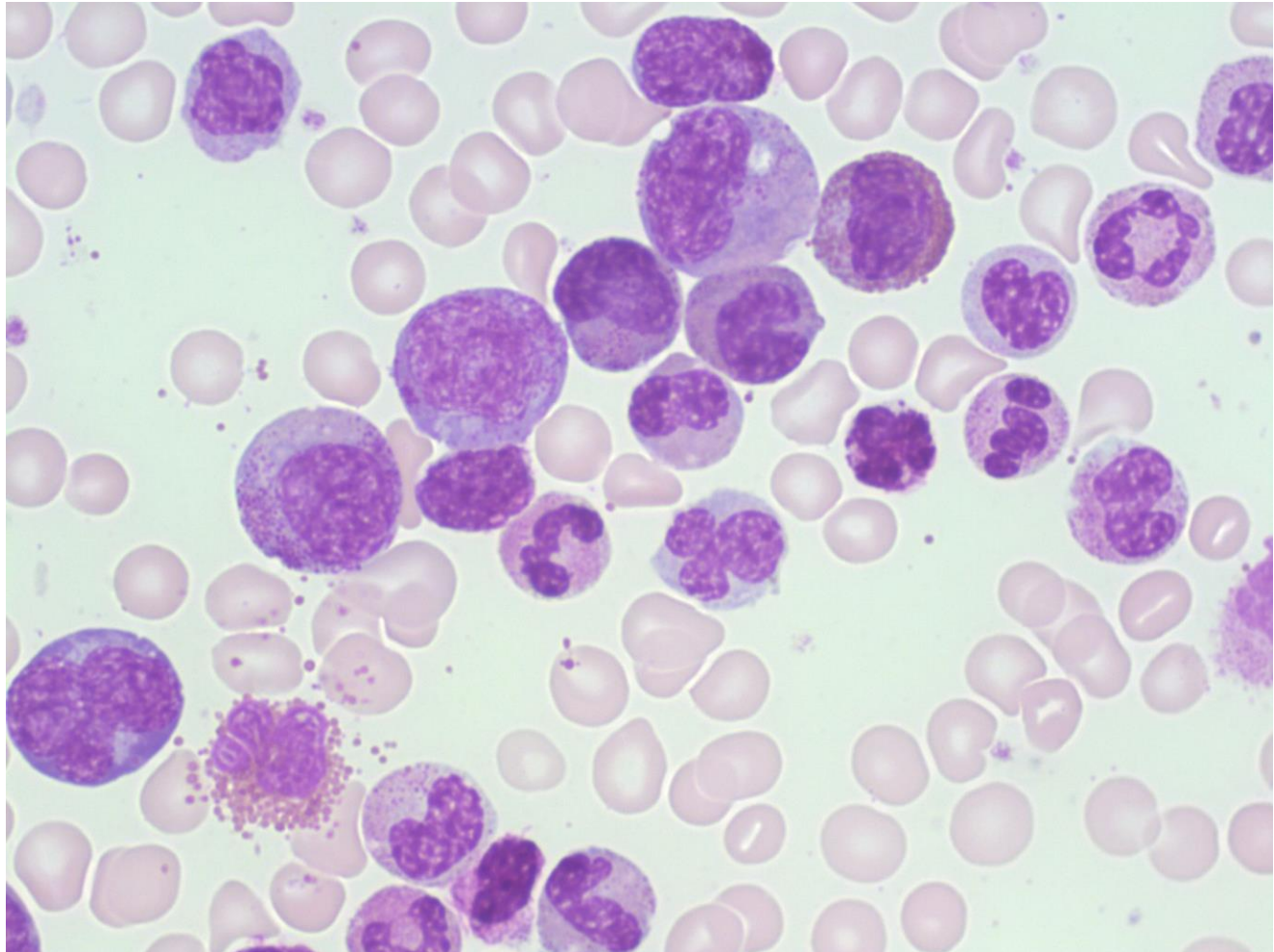
Öncüller, Hastalıklar

Myeloid maturation



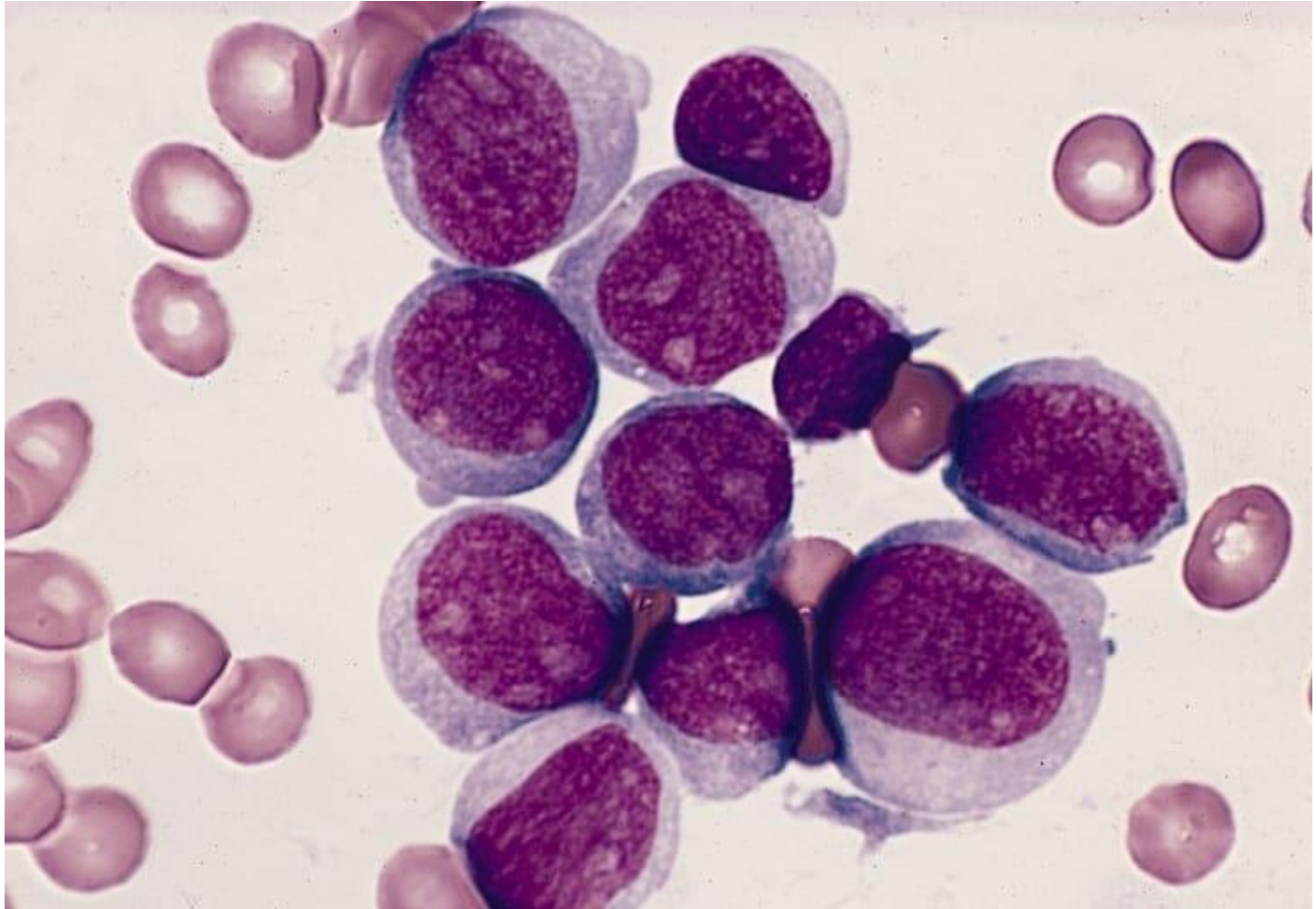
Öncüller, Hastalıklar

- KML



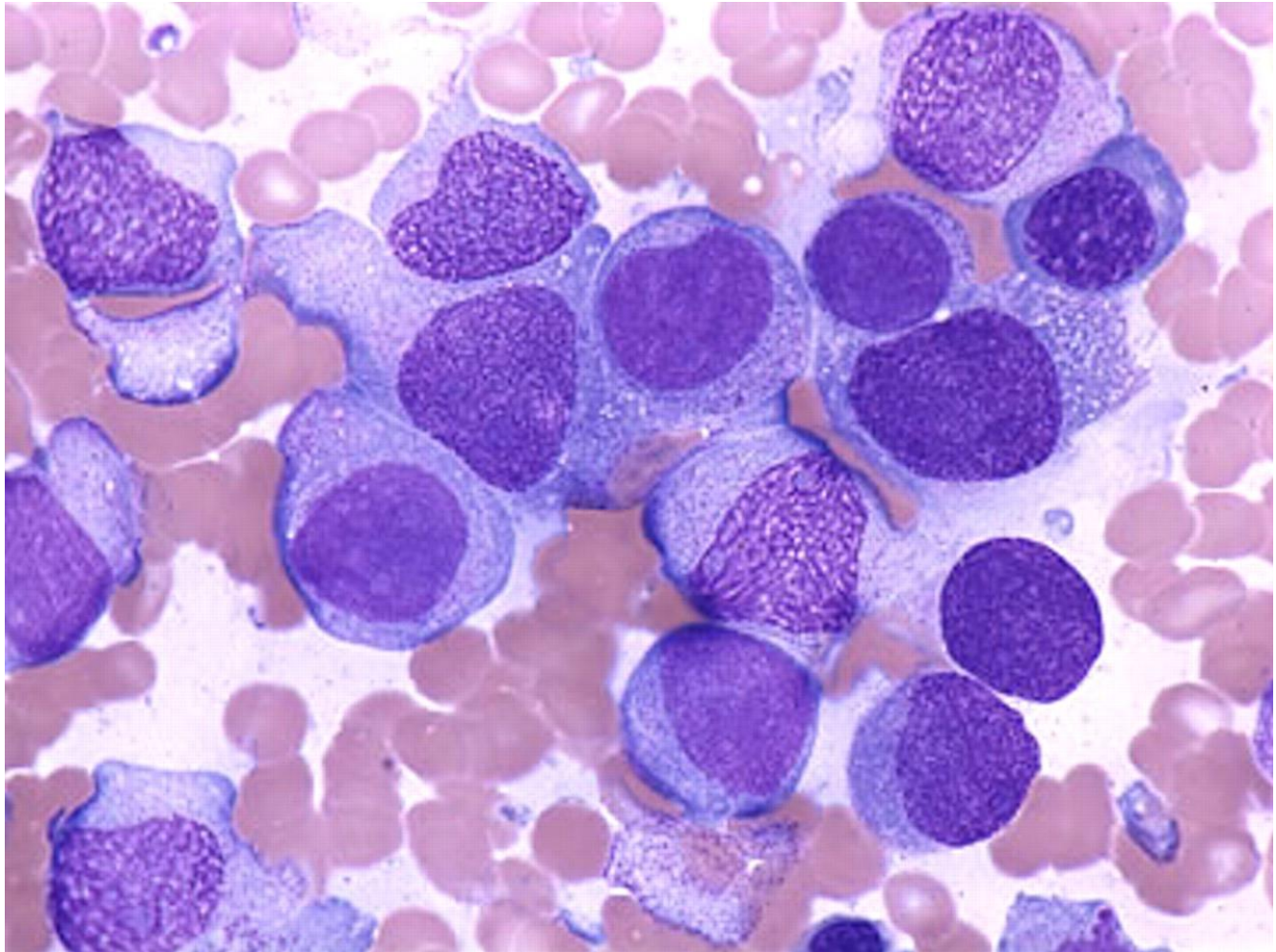
Öncüller, Hastalıklar

- AML



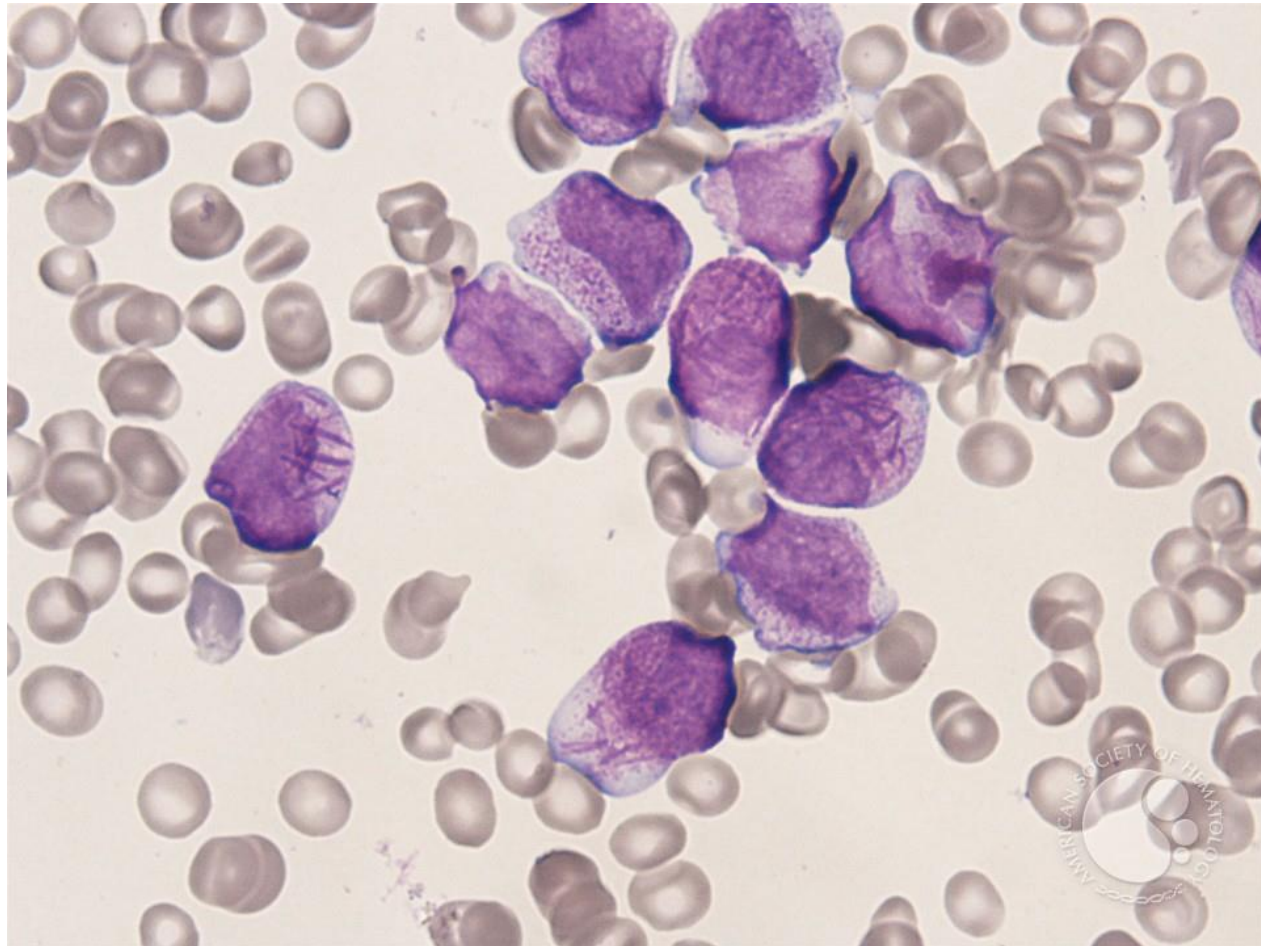
Öncüller, Hastalıklar

- AML M5



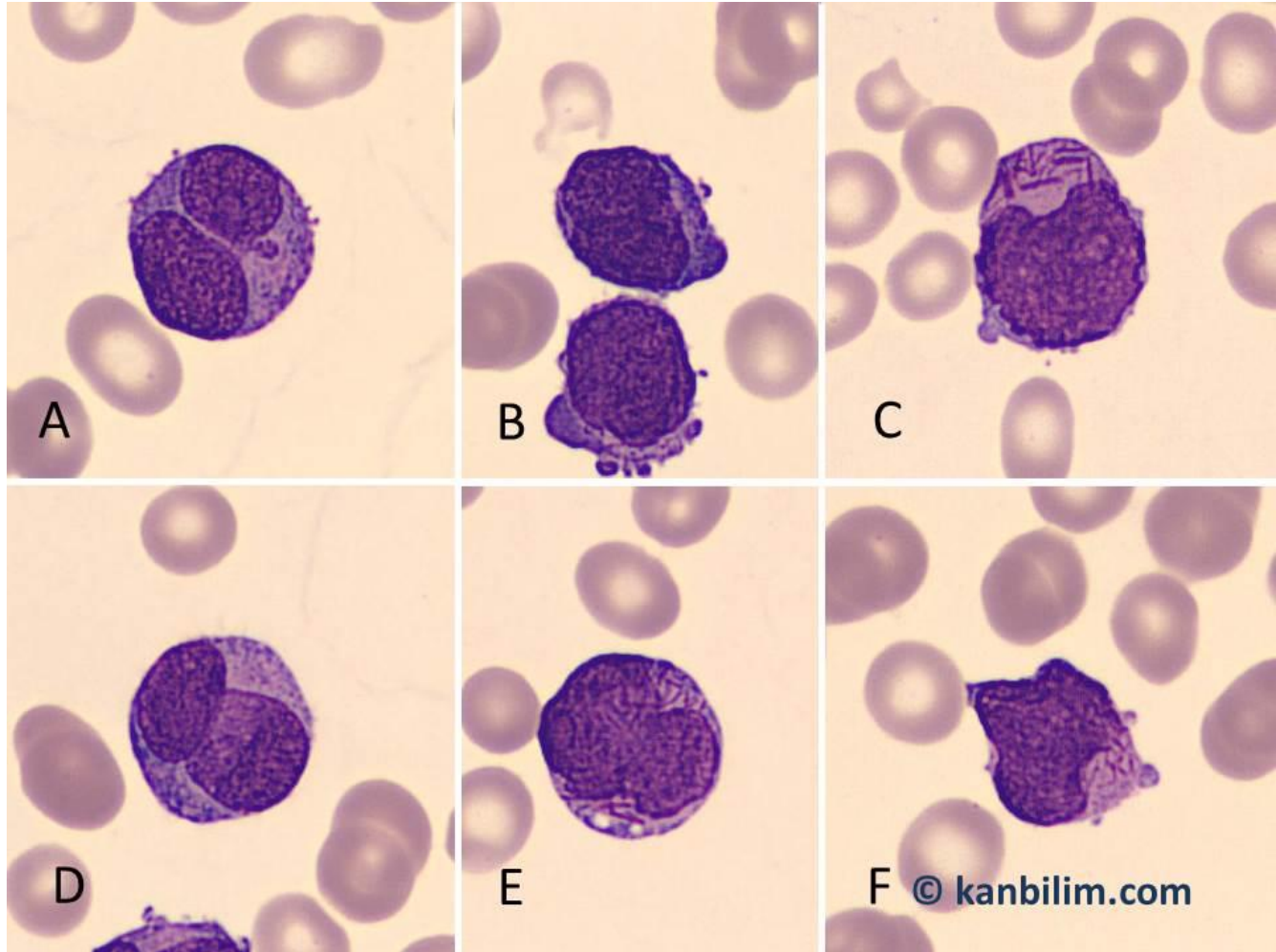
Öncüller, Hastalıklar

- APL



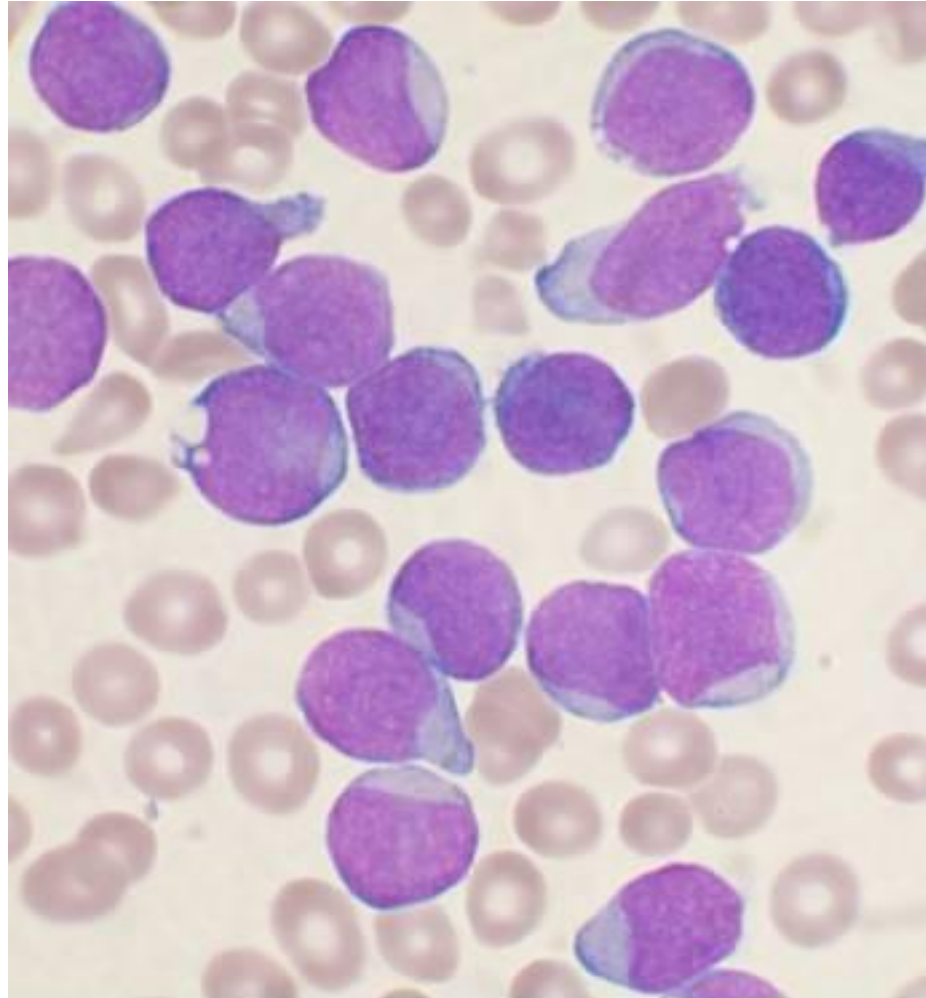
Öncüller, Hastalıklar

- APL



Öncüller, Hastalıklar

- ALL



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