MYELOM VE LENFOMALARDA ALGORİTMALAR

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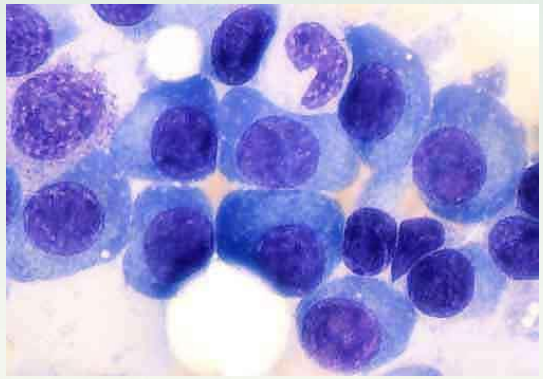
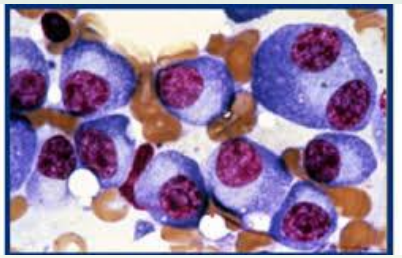
Genetik Tanı Merkezi
Tıbbi Genetikte Algoritmalar Sempozyumu
04.06.2017



Multiple Myelom Tanı Anında



- Öykü ve Fizik İnceleme
- Tam kan sayımı, trombosit sayısı
- Serum BUN, kreatinin, albumin, Ca
- Serum LDH ve ß-2 mikroglobulin
- Serum Ig ler, Serum protein elektroforezi
- 24 saat idrar protein
- Serum hafif zincir assay
- İskelet surveyi
- Kİ biyopsisi (Kİ İHK, Kİ flow sitometri)
- Kİ sitogenetik inceleme
- **Plazma hücre** FISH

MM Genetik Test

Kİ Sitogenetik İnceleme

t(4;14) — kötü prognostik belirteç (relaps)

kötü prognostik belirteç (bir defa) — t(14;16)

KRAS sık t(11;14)

kötü prognostik belirteç (tekrarlanabilir) — del17p13

1q21 amplifikasyon — tekrarlanabilir

kötü prognostik belirteç (tekrarlanabilir) — del13

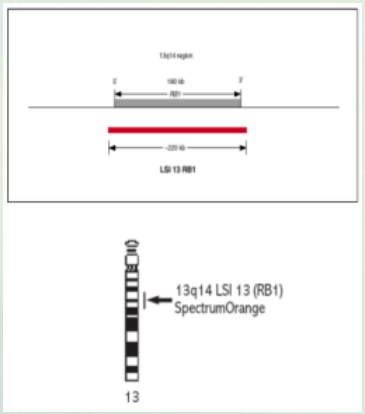
Özetle;

- 14q32 (*IGH* geni)' yi içeren yeniden düzenlenmeler kötü prognostik belirteç
- del13q FISH ile sık görülen bir anomali ancak yalnızca metafazda görünür olduğunda kötü prognostik belirteç
- del17p kötü prognostik belirteç

- Birçok merkezde genetik tarama prognostik danışma, hasta seçimi ve tedavi planlamada rutin olarak kullanılmakta
- NCCN myelom panelinde en az t(4;14)(p16;q32) t(14;16)(q32;q23) 17p13 delesyonu ve kromozom1 amplifikasyonu çalışılmalı diye öneriliyor
- Güncel kılavuzda GEP(gen ekspresyon profilleri) 15gen, 70gen, 92 gen şeklinde paneller yer alıyor. Rutin kullanımı henüz önerilmiyor ancak seçilmiş hastalarda bilgi verici olabileceği vurgulanıyor

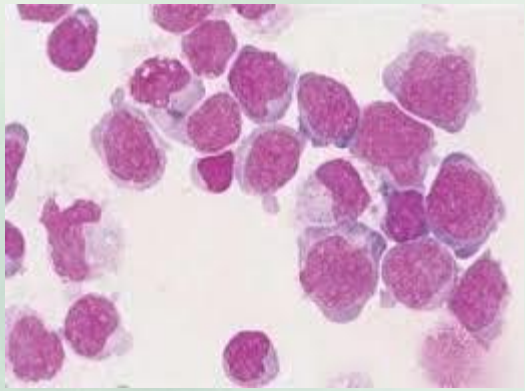
Tartışma

- Konvansiyonel yöntemle anomalileri saptayamama nedenleri??
- 13q delesyonu farklı bölgelere özgü problarla değerlendirmeli mi?? FISH ile 13q del taraması D13S319 (13q14.3) ve D13S25 (13q14.3) ve RB-1 probları
- 13q RB1 rutin taramada kullanılabilir mi??



Lenfoma

- Farklı ve değişken klinik, patolojik ve genetik özellikler gösteren lenfoid doku neoplazilerdir



- Lenfoma sınıflaması epidemiyolojik, morfolojik, immünfenotipik ve genetik özelliklere göre yapılır

Lenfomalar

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NCCN Guidelines Version 3.2017 Staging B-cell Lymphomas

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Discuss

Classification

Table 1

WHO Classification of the Mature B-Cell, T-Cell, and NK-Cell Neoplasms (2017)

Mature B-Cell Neoplasms

- Chronic lymphocytic leukemia/small lymphocytic lymphoma
- Monoclonal B-cell lymphocytosis
- B-cell prolymphocytic leukemia
- Splenic marginal zone lymphoma
- Hairy cell leukemia
- *Splenic lymphoma/leukemia, unclassifiable**
  - *Splenic diffuse red pulp small B-cell lymphoma**
  - *Hairy cell leukemia-variant**
- Lymphoplasmacytic lymphoma
  - Waldenström's macroglobulinemia
- Monoclonal gammopathy of undetermined significance (MGUS), IgM
- Mu heavy chain disease
- Gamma heavy chain disease
- Alpha heavy chain disease
- Monoclonal gammopathy of undetermined significance (MGUS), IgG/A
- Plasma cell myeloma
- Solitary plasmacytoma of bone
- Extraosseous plasmacytoma
- Monoclonal immunoglobulin deposition diseases
- Extranodal marginal zone lymphoma of mucosa-associated lymphoid tissue (MALT type)
- Nodal marginal zone lymphoma
  - *Pediatric nodal marginal zone lymphoma**
- Follicular lymphoma
  - In situ follicular neoplasia
  - Duodenal-type follicular lymphoma
- Pediatric-type follicular lymphoma
- *Large B-cell lymphoma with IRF4 rearrangement*
- Primary cutaneous follicle center lymphoma
- Mantle cell lymphoma
  - In situ mantle cell neoplasia
- Diffuse large B-cell lymphoma (DLBCL), NOS
  - Germinal center B-cell type
  - Activated B-cell type
- T-cell/histiocyte-rich large B-cell lymphoma
- Primary DLBCL of the central nervous system (CNS)
- Primary cutaneous DLBCL, leg type
- EBV-positive DLBCL, NOS
- *EBV-positive mucocutaneous ulcer**
- DLBCL associated with chronic inflammation
- Lymphomatoid granulomatosis
- Primary mediastinal (thymic) large B-cell lymphoma
- Intravascular large B-cell lymphoma
- ALK-positive large B-cell lymphoma
- Plasmablastic lymphoma
- Primary effusion lymphoma
- *HHV8-positive DLBCL, NOS**
- Burkitt lymphoma
- *Burkitt-like lymphoma with 11q aberration**
- High-grade B-cell lymphoma, with *MYC* and B*CL2* and/or *BCL6* rearrangements
- High-grade B-cell lymphoma, NOS
- B-cell lymphoma, unclassifiable, with features intermediate between DLBCL and classical Hodgkin lymphoma

*Provisional entities are listed in italics.

Continued on next page

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NCCN Guidelines Version 3.2017 Staging B-cell Lymphomas

NCCN Guidelines In
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Discus

Classification

Table 1 continued

WHO Classification of the Mature B-Cell, T-Cell, and NK-Cell Neoplasms (2017)

Mature T-Cell and NK-Cell Neoplasms

- T-cell prolymphocytic leukemia
- T-cell large granular lymphocytic leukemia
- *Chronic lymphoproliferative disorder of NK-cells**
- Aggressive NK-cell leukemia
- Systemic EBV-positive T-cell lymphoma of childhood
- Hydroa vacciniforme–like lymphoproliferative disorder
- Adult T-cell leukemia/lymphoma
- Extranodal NK/T-cell lymphoma, nasal type
- Enteropathy-associated T-cell lymphoma
- Monomorphic epitheliotropic intestinal T-cell lymphoma*
- *Indolent T-cell lymphoproliferative disorder of the GI tract**
- Hepatosplenic T-cell lymphoma
- Subcutaneous panniculitis-like T-cell lymphoma
- Mycosis fungoides
- Sézary syndrome
- Primary cutaneous CD30-positive T-cell lymphoproliferative disorders
  - Lymphomatoid papulosis
  - Primary cutaneous anaplastic large cell lymphoma
- Primary cutaneous gamma-delta T-cell lymphoma
- *Primary cutaneous CD8-positive aggressive epidermotropic cytotoxic T-cell lymphoma**
- *Primary cutaneous acral CD8-positive T-cell lymphoma**
- *Primary cutaneous CD4-positive small/medium T-cell lymphoproliferative disorder**
- Peripheral T-cell lymphoma, NOS
- Angioimmunoblastic T-cell lymphoma
- *Follicular T-cell lymphoma**
- *Nodal peripheral T-cell lymphoma with TFH phenotype**
- Anaplastic large-cell lymphoma, ALK positive
- Anaplastic large-cell lymphoma, ALK negative
- *Breast implant–associated anaplastic large-cell lymphoma**

Hodgkin Lymphoma

- Nodular lymphocyte-predominant Hodgkin lymphoma
- Classical Hodgkin lymphoma
  - Nodular sclerosis classical Hodgkin lymphoma
  - Lymphocyte-rich classical Hodgkin lymphoma
  - Mixed cellularity classical Hodgkin lymphoma
  - Lymphocyte-depleted classical Hodgkin lymphoma

Posttransplant Lymphoproliferative Disorders (PTLD)

- Plasmacytic hyperplasia PTLD
- Infectious mononucleosis-like PTLD
- Florid follicular hyperplasia PTLD
- Polymorphic PTLD
- Monomorphic PTLD (B- and T/NK-cell types)
- Classical Hodgkin lymphoma PTLD

Histiocytic and dendritic cell neoplasms

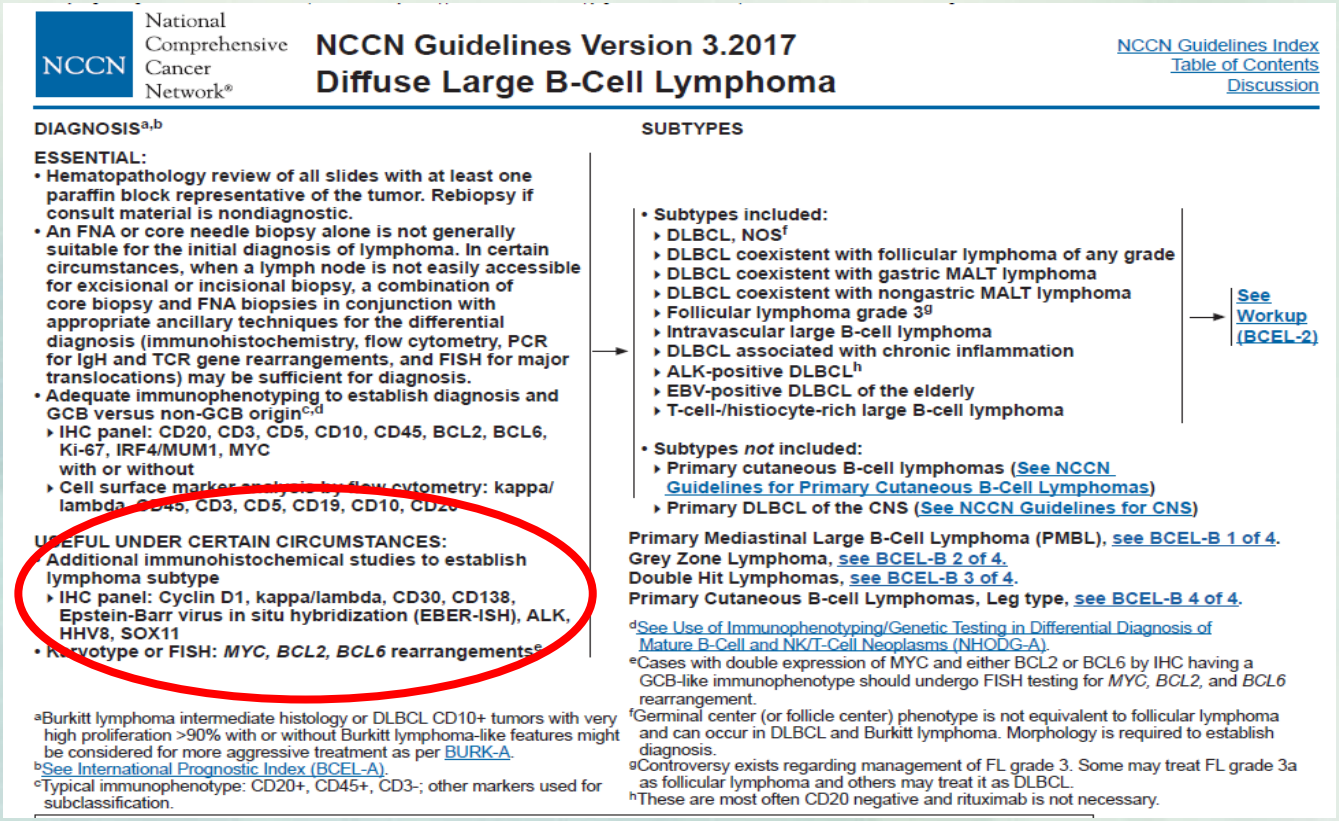
- Histiocytic sarcoma
- Langerhans cell histiocytosis
- Langerhans cell sarcoma
- Indeterminate dendritic cell tumor
- Interdigitating dendritic cell sarcoma
- Follicular dendritic cell sarcoma
- Fibroblastic reticular cell tumor
- Disseminated juvenile xanthogranuloma
- Erdheim-Chester disease

*Provisional entities are listed in italics.

Swerdlow SH, Campo E, Pileri SA, Harris NL, Stein H, Siebert R, Advani R, Ghielmini M, Salles GA, Zelenetz AD, Jaffe ES. The 2017 revision of the World Health Organization classification of lymphoid neoplasms. Blood 2017;127:2375-2390.

Diffuz Büyük B Hücreli Lenfoma (DBBHL)

- Tüm NHL' ların %30-58' i
- Tanı: Eksizyonel LN biyopsi



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NCCN Guidelines Version 3.2017
Diffuse Large B-Cell Lymphoma

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Discussion

DIAGNOSIS[a,b]

ESSENTIAL:
- Hematopathology review of all slides with at least one paraffin block representative of the tumor. Rebiopsy if consult material is nondiagnostic.
- An FNA or core needle biopsy alone is not generally suitable for the initial diagnosis of lymphoma. In certain circumstances, when a lymph node is not easily accessible for excisional or incisional biopsy, a combination of core biopsy and FNA biopsies in conjunction with appropriate ancillary techniques for the differential diagnosis (immunohistochemistry, flow cytometry, PCR for IgH and TCR gene rearrangements, and FISH for major translocations) may be sufficient for diagnosis.
- Adequate immunophenotyping to establish diagnosis and GCB versus non-GCB origin[c,d]
  - IHC panel: CD20, CD3, CD5, CD10, CD45, BCL2, BCL6, Ki-67, IRF4/MUM1, MYC with or without
  - Cell surface marker analysis by flow cytometry: kappa/lambda, CD45, CD3, CD5, CD19, CD10, CD20

USEFUL UNDER CERTAIN CIRCUMSTANCES:
- Additional immunohistochemical studies to establish lymphoma subtype
  - IHC panel: Cyclin D1, kappa/lambda, CD30, CD138, Epstein-Barr virus in situ hybridization (EBER-ISH), ALK, HHV8, SOX11
- Karyotype or FISH: *MYC, BCL2, BCL6* rearrangements[e]

SUBTYPES

- Subtypes included:
  - DLBCL, NOS[f]
  - DLBCL coexistent with follicular lymphoma of any grade
  - DLBCL coexistent with gastric MALT lymphoma
  - DLBCL coexistent with nongastric MALT lymphoma
  - Follicular lymphoma grade 3[g]
  - Intravascular large B-cell lymphoma
  - DLBCL associated with chronic inflammation
  - ALK-positive DLBCL[h]
  - EBV-positive DLBCL of the elderly
  - T-cell-/histiocyte-rich large B-cell lymphoma

→ See Workup (BCEL-2)

- Subtypes *not* included:
  - Primary cutaneous B-cell lymphomas (See NCCN Guidelines for Primary Cutaneous B-Cell Lymphomas)
  - Primary DLBCL of the CNS (See NCCN Guidelines for CNS)

Primary Mediastinal Large B-Cell Lymphoma (PMBL), see BCEL-B 1 of 4.
Grey Zone Lymphoma, see BCEL-B 2 of 4.
Double Hit Lymphomas, see BCEL-B 3 of 4.
Primary Cutaneous B-cell Lymphomas, Leg type, see BCEL-B 4 of 4.

[a]Burkitt lymphoma intermediate histology or DLBCL CD10+ tumors with very high proliferation >90% with or without Burkitt lymphoma-like features might be considered for more aggressive treatment as per BURK-A.
[b]See International Prognostic Index (BCEL-A).
[c]Typical immunophenotype: CD20+, CD45+, CD3-; other markers used for subclassification.
[d]See Use of Immunophenotyping/Genetic Testing in Differential Diagnosis of Mature B-Cell and NK/T-Cell Neoplasms (NHODG-A).
[e]Cases with double expression of MYC and either BCL2 or BCL6 by IHC having a GCB-like immunophenotype should undergo FISH testing for *MYC, BCL2,* and *BCL6* rearrangement.
[f]Germinal center (or follicle center) phenotype is not equivalent to follicular lymphoma and can occur in DLBCL and Burkitt lymphoma. Morphology is required to establish diagnosis.
[g]Controversy exists regarding management of FL grade 3. Some may treat FL grade 3a as follicular lymphoma and others may treat it as DLBCL.
[h]These are most often CD20 negative and rituximab is not necessary.

Diffüz Büyük B Hücreli Lenfoma Tanı

Tanı Anında Gerekli

Histopatolojik inceleme

Ayırıcı Tanı için İHK, flow sitometri, IGH ve TCR için PCR, majör translokasyonlar için FISH)

İmmunfenotiplendirme (CD20, CD3, CD5, CD10, CD45, BCL2, BCL6, Kİ67, *IRF4/MUM1, MYC*)

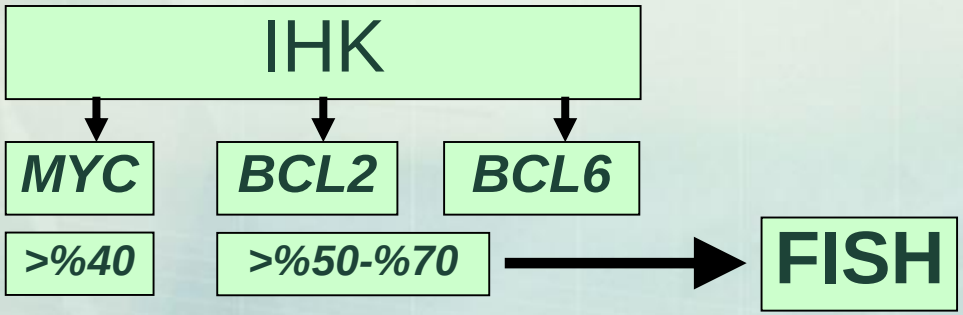
Bazı Koşullarda Faydalı Olabilecek

İHK paneli: Siklin D1, kappa/lambda CD30, CD138, *ALK*, *HHV8*, *SOX11*

Karyotip ve FISH: *MYC*, *BCL2*, *BCL6* yeniden düzenlenmeleri

Diffuz Büyük B Hücreli Lenfoma (DBBHL)

- *MYC* ve *BCL2* yeniden düzenlenme varlığı ‘double-hit’
- *MYC, BCL2* ve *BCL6* yeniden düzenlenme birlikteliği ‘triple-hit’
- Kötü prognostik, agresif tedavi



- FISH ile doğrulanmıyorsa ‘double expressor lenfoma’
- Double-hit lenfoma kadar olmasa da kötü prognoz

Folliküler Lenfoma

- NHL grubunda 2. en sık görülen lenfoma
- Normal germinal merkez B hücrelerinin malign formu
- Tümör mikroçevresi makrofaj, follikül dendritik hücreler, fibroblastlar, endotel hücrelerinden oluşur
- Tanı: eksizyonel lenf nodu biyopsisi
- Evreleme: Ann Arbor sistemi

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Follicular Lymphoma[a] (grade 1-2)

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DIAGNOSIS

ESSENTIAL:

- **Hematopathology review of all slides with at least one paraffin block representative of the tumor. Rebiopsy if consult material is nondiagnostic.**
- **An FNA or core needle biopsy alone is not generally suitable for the initial diagnosis of lymphoma. In certain circumstances, when a lymph node is not easily accessible for excisional or incisional biopsy, a combination of core biopsy and FNA biopsies in conjunction with appropriate ancillary techniques for the differential diagnosis (immunohistochemistry, flow cytometry, PCR for IGHV and TCR gene rearrangements, and FISH for major translocations) may be sufficient for diagnosis. Histologic grading cannot be performed on an FNA.**
- **Adequate immunophenotyping to establish diagnosis[b,c]**
  - **IHC panel: CD20, CD3, CD5, CD10, BCL2,[d] BCL6, CD21, or CD23, with or without**
  - **Cell surface marker analysis by flow cytometry: kappa/lambda, CD19, CD20, CD5, CD23, CD10**

USEFUL UNDER CERTAIN CIRCUMSTANCES:

- **Molecular analysis to detect: antigen receptor gene rearrangements; *BCL2* rearrangements[d]**
- **Karyotype or FISH:[e,f] t(14;18); *BCL6*, 1p36, IRF4/MUM1 rearrangements[d]**
- **IHC panel: Ki-67;[g] IRF4/MUM1 for FL grade 3, cyclin D1**

- **Typical follicular lymphoma** → See Workup (FOLL-2)
- **Follicular lymphoma with 1p36 translocation[e]** → See FOLL-3 **Stage I (non-bulky) or contiguous stage II (non-bulky)**
- **Large B-cell lymphoma with IRF4 rearrangement[f]** → See BCEL-2
- **Pediatric-type follicular lymphoma[d] (in adults)** → See FOLL-7

Germinal center or follicular center cell phenotype type is not equivalent to follicular lymphoma and occurs in Burkitt lymphoma and some DLBCL.

[a]Follicular lymphoma (FL), grade 1-2. FL, grade 3 is an area of controversy. The distinction between follicular grade 3a and 3b has not been shown to have clinical significance to date. However, controversy exists regarding management of FL grade 3. Some may treat FL grade 3a as FL and others may treat it as diffuse large B-cell lymphoma (DLBCL). FL, grade 3b is commonly treated according to the NCCN Diffuse Large B-Cell Lymphoma Guideline (BCEL-1). Any area of DLBCL in a FL of any grade should be diagnosed and treated as a DLBCL.

[b]Typical immunophenotype: CD10+, BCL2+, CD23+/-, CD43-, CD5-, CD20+, BCL6+. Rare cases of follicular lymphoma may be CD10- or BCL2-.

[c]See Use of Immunophenotyping/Genetic Testing in Differential Diagnosis of Mature B-Cell and NK/T-Cell Neoplasms (NHODG-A).

[d]In young patients with localized disease that lacks BCL2 expression or t(14;18), consider entity of pediatric-type FL. Analysis of BCL6 rearrangement may be useful for evaluating the diagnosis of pediatric-type FL.

[e]FL with 1p36 deletions have a predominant diffuse pattern in inguinal nodes, large localized mass, CD23+, typically grade 1-2 and have a good prognosis.

[f]Lymphomas with IRF4 translocations are usually DLBCL but occasionally are purely FL grade 3b and often DLBCL with FL grade 3b. Patients typically present with Waldeyer's ring involvement and are often children/young adults. The tumor is locally aggressive but responds well to chemotherapy +/- RT. These lymphomas do not have a BCL2 rearrangement and should not be treated as low-grade FL.

[g]There are reports showing that Ki-67 proliferation fraction of >30 % may be associated with a more aggressive clinical behavior, but there is no evidence that this should guide treatment decisions.

Note: All recommendations are category 2A unless otherwise indicated.
Clinical Trials: NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

Folliküler Lenfoma Tanı

Tanı Anında Gerekli

eksizyonel lenf nodu biyopsisi

Ayırıcı Tanı için İHK, flow sitometri, *IGVH* ve *TCR* için PCR, majör translokasyonlar için FISH)

İmmunfenotiplendirme

Bazı Koşullarda Faydalı Olabilecek

Antijen reseptör gen yeniden düzenlenmelerinin, bcl-2 mutasyonunun gösterilmesi (pediyatrik tip FL)

Karyotip ve FISH; t(14;18), *bcl-6*, **1p36**, *IRF4/MUM1* yeniden düzenlenmeleri

IHK paneli: Ki-67, *IRF4/MUM1* , Siklin D1

Mantle Hücreli Lenfoma

- Tüm lenfomaların %6-9'u
- Ekstranodal tutulum sık (Kİ, KC, dalak, Waldeyer halkası ve GİS kanal tutulumu)
- Tanı: eksizyonel lenf nodu biyopsisi
- Preanalitik aşamada dikkat edilmesi gerekenler doku kendi hacminin 8-10 katı %10 nötral tamponlu formalin içinde 18-24 saat fikse edilmeli. 48 saat formalin içinde beklemiş dokularda İHK ve moleküler testlerde yanlış negatiflikler olabilmektedir

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Mantle Cell Lymphoma

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DIAGNOSIS

ESSENTIAL:

- Hematopathology review of all slides with at least one paraffin block representative of the tumor. Rebiopsy if consult material is nondiagnostic.
- An FNA or core needle biopsy alone is not generally suitable for the initial diagnosis of lymphoma. In certain circumstances, when a lymph node is not easily accessible for excisional or incisional biopsy, a combination of core biopsy and FNA biopsies in conjunction with appropriate ancillary techniques for the differential diagnosis (immunohistochemistry, flow cytometry, PCR for IgH and TCR gene rearrangements, and FISH for major translocations) may be sufficient for diagnosis.
- Adequate immunophenotyping to establish diagnosis[a,b]
  - IHC panel: CD20, CD3, CD5, cyclin D1, CD10, CD21, CD23, BCL2, BCL6, Ki-67[c] with or without
  - Cell surface marker analysis by flow cytometry: kappa/lambda, CD19, CD20, CD5, CD23, CD10

USEFUL UNDER CERTAIN CIRCUMSTANCES:

- IHC: LEF1 may help distinguish from variant CLL; SOX11 or IGHV sequencing may be useful for determination of indolent MCL; may also help in diagnosis of CCND1- MCL.
- Karyotype or FISH: t(11;14), t(14;18), CLL panel
- Cell surface marker analysis by flow cytometry: CD200

WORKUP

ESSENTIAL:

- Physical exam: Attention to node-bearing areas, including Waldeyer's ring, and to size of liver and spleen
- Performance status
- B symptoms
- CBC, differential, platelets
- Comprehensive metabolic panel
- LDH
- Bone marrow biopsy ± aspirate
- C/A/P CT with contrast of diagnostic quality and/or whole-body PET/CT scan
- Hepatitis B testing[d] if rituximab contemplated
- Echocardiogram or MUGA scan if anthracycline or anthracenedione-based regimen is indicated
- Pregnancy testing in women of child-bearing age (if chemotherapy or RT planned)

USEFUL UNDER CERTAIN CIRCUMSTANCES:

- Endoscopy/colonoscopy[e]
- Neck CT with contrast
- Uric acid
- Discussion of fertility issues and sperm banking
- Lumbar puncture (for blastic variant or CNS symptoms)
- Beta-2-microglobulin

See Induction Therapy (MANT-2)

[a]Typical immunophenotype: CD5+, CD20+, CD43+, CD23-/+, cyclin D1+, CD10-/+. Note: Some cases of MCL may be CD5- or CD23+. If the diagnosis is suspected, cyclin D1 staining or FISH for t(11;14) should be done. There are rare cases of *CCND1*- MCL (<5%) with an otherwise typical immunophenotype.

[b]See Use of Immunophenotyping/Genetic Testing in Differential Diagnosis of Mature B-Cell and NK/T-Cell Neoplasms (NHODG-A).

[c]Ki-67 proliferation fraction of <30% in lymph nodes is associated with a more favorable prognosis. However, it is not used to guide treatment.

[d]Hepatitis B testing is indicated because of the risk of reactivation with immunotherapy + chemotherapy. Tests include hepatitis B surface antigen and core antibody for a patient with no risk factors. For patients with risk factors or previous history of hepatitis B, add e-antigen. If positive, check viral load and consult with gastroenterologist.

[e]Essential for confirmation of stage I-II disease. See Discussion for details.

Note: All recommendations are category 2A unless otherwise indicated.
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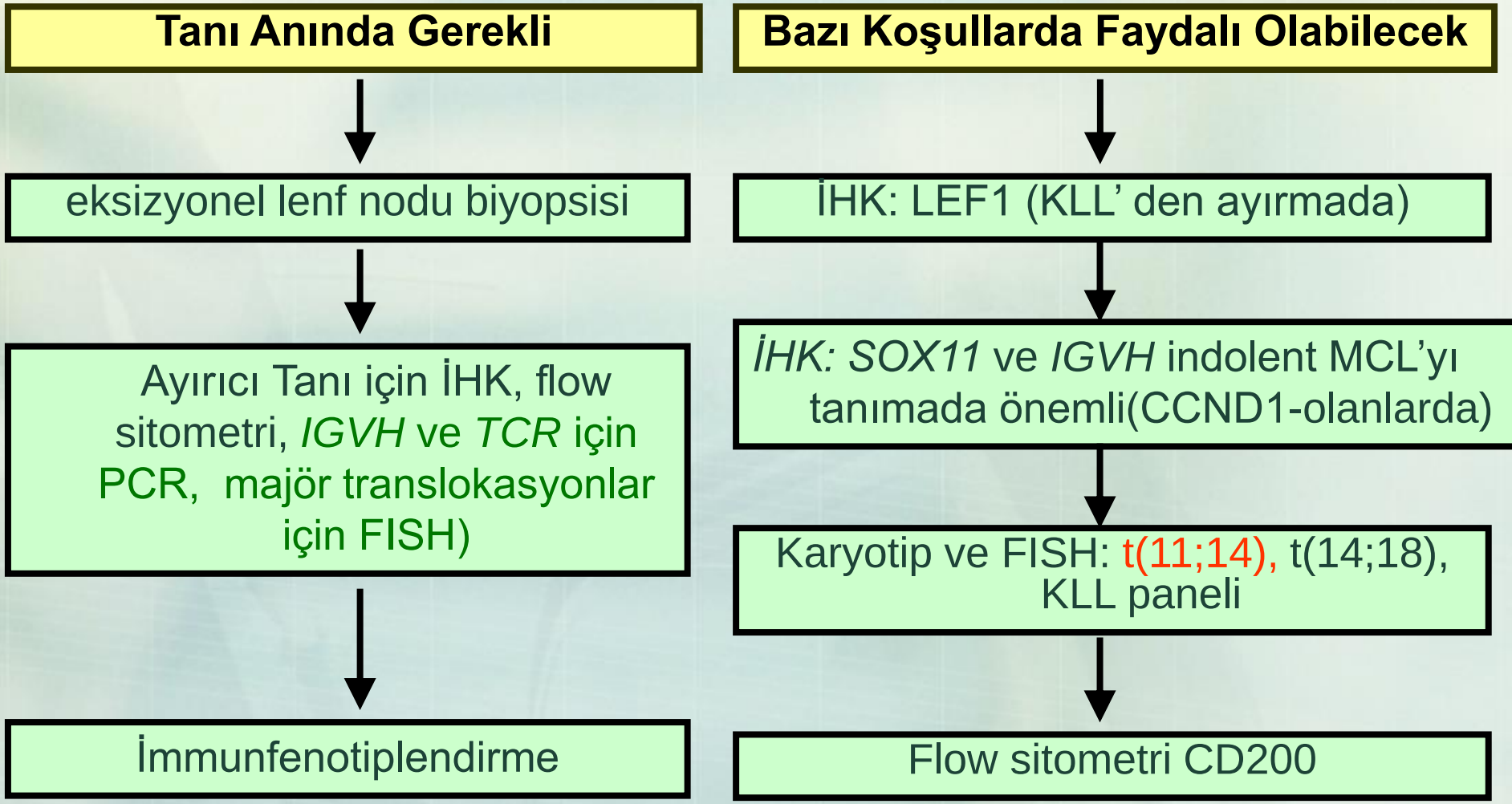
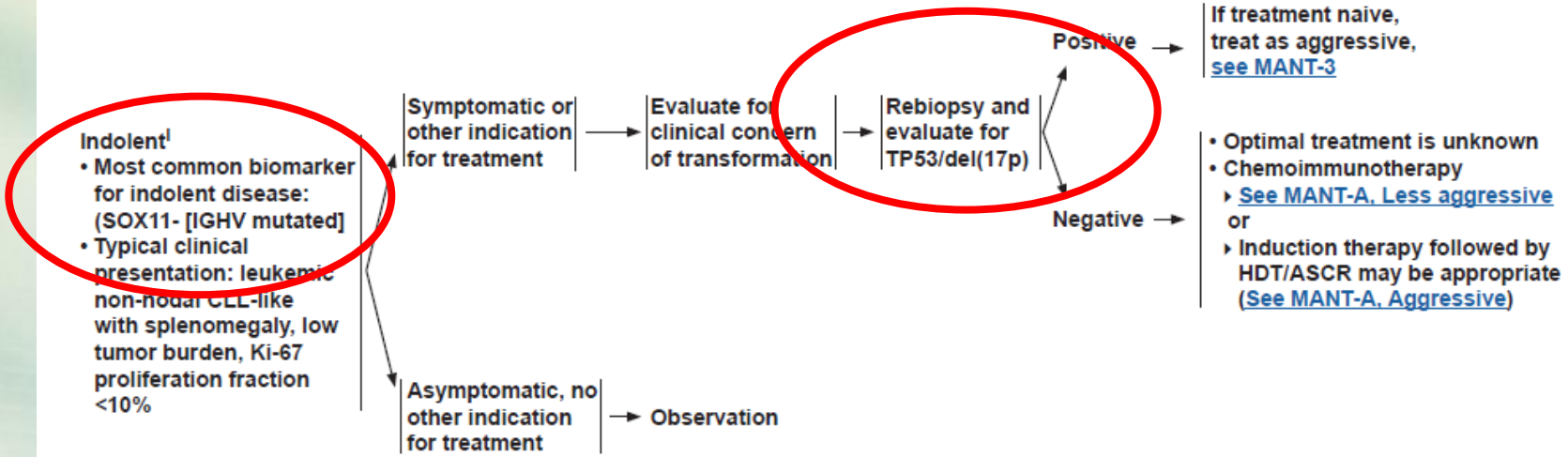
Mantle Hücreli Lenfoma Tanı





Consider prophylaxis for tumor lysis syndrome (See NHODG-B)

See monoclonal antibody and viral reactivation (NHODG-B)

[I]The description represents the most common indolent presentation; however, there are some patients with GI or blood/bone marrow involvement only, which may express SOX11 and have an indolent course.

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Clinical Trials: NCCN believes that the best management of any patient with cancer is in a clinical trial. Participation in clinical trials is especially encouraged.

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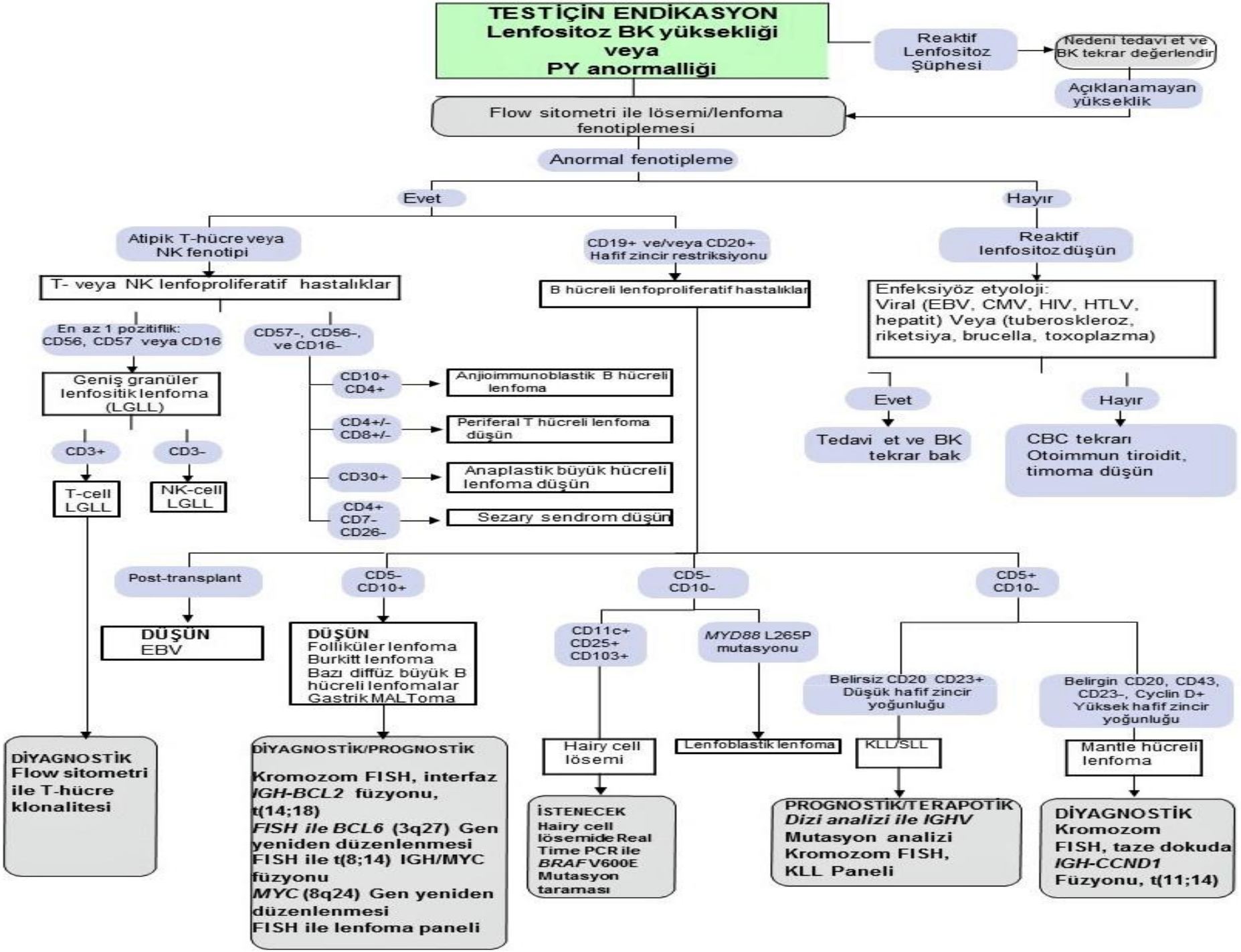
Hodgkin Lenfoma

- %20 Ig gen lokusu içeren genetik değişiklikler
- del1p, dup1q, del6q, del7q
- NFkappa/beta
- JAK/STAT yolağı


TESTİÇİN ENDİKASYON
Lenfositoz BK yüksekliği
veya
PY anormalliği
Reaktif Lenfositoz Şüphesi
Nedeni tedavi et ve BK tekrar değerlendir
Açıklanamayan yükseklik
Flow sitometri ile lösemi/lenfoma fenotiplemesi
Anormal fenotipleme
Evet
Hayır
Atipik T-hücre veya NK fenotipi
CD19+ ve/veya CD20+ Hafif zincir restriksiyonu
Reaktif lenfositoz düşün
T- veya NK lenfoproliferatif hastalıklar
B hücreli lenfoproliferatif hastalıklar
Enfeksiyöz etyoloji: Viral (EBV, CMV, HIV, HTLV, hepatit) Veya (tuberoskleroz, riketsiya, brucella, toxoplazma)
En az 1 pozitiflik: CD56, CD57 veya CD16
CD57-, CD56-, ve CD16-
Geniş granüler lenfositik lenfoma (LGLL)
CD10+ CD4+
Anjioimmunoblastik B hücreli lenfoma
CD4+/- CD8+/-
Periferal T hücreli lenfoma düşün
CD30+
Anaplastik büyük hücreli lenfoma düşün
CD4+ CD7- CD26-
Sezary sendrom düşün
Evet
Hayır
Tedavi et ve BK tekrar bak
CBC tekrarı Otoimmun tiroidit, timoma düşün
CD3+
CD3-
T-cell LGLL
NK-cell LGLL
Post-transplant
CD5- CD10+
CD5- CD10-
CD5+ CD10-
DÜŞÜN EBV
DÜŞÜN Folliküler lenfoma Burkitt lenfoma Bazı diffüz büyük B hücreli lenfomalar Gastrik MALToma
CD11c+ CD25+ CD103+
MYD88 L265P mutasyonu
Belirsiz CD20 CD23+ Düşük hafif zincir yoğunluğu
Belirgin CD20, CD43, CD23-, Cyclin D+ Yüksek hafif zincir yoğunluğu
DİYAGNOSTİK Flow sitometri ile T-hücre klonalitesi
DİYAGNOSTİK/PROGNOSTİK Kromozom FISH, interfaz IGH-BCL2 füzyonu, t(14;18) FISH ile BCL6 (3q27) Gen yeniden düzenlenmesi FISH ile t(8;14) IGH/MYC füzyonu MYC (8q24) Gen yeniden düzenlenmesi FISH ile lenfoma paneli
Hairy cell lösemi
Lenfoblastik lenfoma
KLL/SLL
Mantle hücreli lenfoma
İSTENECEK Hairy cell lösemide Real Time PCR ile BRAF V600E Mutasyon taraması
PROGNOSTİK/TERAPOTİK Dizi analizi ile IGHV Mutasyon analizi Kromozom FISH, KLL Paneli
DİYAGNOSTİK Kromozom FISH, taze dokuda IGH-CCND1 Füzyonu, t(11;14)

Kaynaklar

- National Comprehensive Cancer Network (NCCN Guidelines)
- European Society of Medical Oncology (ESMO) Guidelines
- International Myeloma Working Group (IMWG)
- Türk Hematoloji Derneği (THD) Tanı ve Tedavi Kılavuzları

MYELOM VE LENFOMALARDA ALGORİTMALAR

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