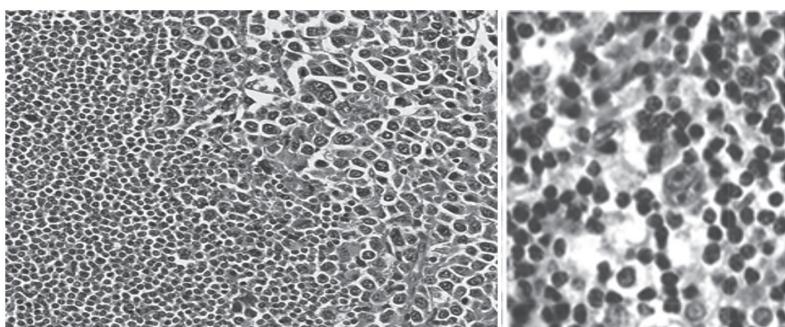


RICHTER TRANSFORMASYONU TANI, KLİNİK VE TEDAVİ

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GİRİŞ

Richter transformasyonu (RT), Maurice Richter tarafından 1928 yılında tanımlanmıştır. Hastalarda daha önceden alta yatan kronik lenfositik lösemi / küçük lenfositik lenfoma (KLL / SLL) zemininde agresif büyük hücreli lenfoma gelişimi olarak tanımlanmıştır. Richter transformasyonu gelişen hastalarda en sık görülen histolojik alt tip Diffüz büyük B hücreli lenfomadır (DBBHL). Ayrıca daha az sıklıkta Hodgkin lenfoma ve T hücreli lenfoma gelişimi olarak karşımıza çıkabilemektedir (Şekil 1).



Şekil 1. A) Richter transformasyonu gelişen kronik lenfositik lösemili (KLL) bir hastanın lenf düğümü. Sol taraftaki küçük lenfositler önceden var olan KLL'yi temsil eder, sağdaki büyük B hücreleri ile zıtlık gösterir ve dağınık bir büyük B hücreli lenfomaya dönüşümü temsil eder. B) Richter transformasyonu sonucu Hodgkin lenfoma gelişimi

Warnke RA, Weiss LM, Chan JK, et al. Tumors of the lymph nodes and spleen. Atlas of tumor pathology (electronic fascicle), Third series, fascicle 14, 1995, Washington, DC. Armed Forces Institute of Pathology den alınmıştır.

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Hodgkin lenfoma (HL) varyantı için kombinasyon kemoterapisi (örn ABVD) kullanımı önerilmektedir. Bu hastalarda tam remisyon elde edenler ilerlemeye kadar gözlenir. Bir tam remisyon sağlayamayan hastalarda eğer uygunsa, ilerleyen süreçte komplet remisyon durumunda miyeloablatif olmayan allojenik HKHT'yi yapma planı ile refrakter HL için kullanılan seri rejimler kullanılabilir.

RT için tedavi sonuçlarılarındaki sınırlı veriler göz önüne alındığında, RT'lı hastaların uygun şekilde tasarlanmış bir klinik çalışmaya katılmaları sağlanabilir.

DBBHL histolojik alt tipi RT olan hastalarda hedefe yönelik tedaviler inceleme aşamasındadır.

İbrutinib, pembrolizumab, nivolumab, venetoclax gibi ajanlar bazı çalışmalar da az sayıda hastada kullanılmış ve değişken yanıtlar elde edilmiştir. İlk çalışmalar, hedefe yönelik tedavilere cevap vermiş olsa da, bu ajanları RT hastalarında kullanmanın en iyi yolunu belirlemek için daha fazla çalışmaya ihtiyaç vardır.

Anahtar Kelimeler: Richter transformasyonu, Kronik lenfositik lösemi, Diffuz büyük B hücreli lenfoma,

Kaynakça

1. Tsimberidou AM, Keating MJ. Richter syndrome: biology, incidence, and therapeutic strategies. *Cancer* 2005; 103:216.
2. Parikh SA, Rabe KG, Call TG, et al. Diffuse large B-cell lymphoma (Richter syndrome) in patients with chronic lymphocytic leukaemia (CLL): a cohort study of newly diagnosed patients. *Br J Haematol* 2013; 162:774.
3. Morrison VA, Rai K, Peterson BL, et al. Transformation to Richter's Syndrome or Prolymphocytic Leukemia (PLL): an Intergroup Study (CALGB 9011). *Blood* 1999; 94:539a.
4. Robertson LE, Pugh W, O'Brien S, et al. Richter's syndrome: a report on 39 patients. *J Clin Oncol* 1993; 11:1985.
5. Harousseau JL, Flandrin G, Tricot G, et al. Malignant lymphoma supervening in chronic lymphocytic leukemia and related disorders. Richter's syndrome: a study of 25 cases. *Cancer* 1981; 48:1302.
6. Rossi D, Cerri M, Capello D, et al. Biological and clinical risk factors of chronic lymphocytic leukaemia transformation to Richter syndrome. *Br J Haematol* 2008; 142:202.
7. Tsimberidou AM, O'Brien S, Kantarjian HM, et al. Hodgkin transformation of chronic lymphocytic leukemia: the M. D. Anderson Cancer Center experience. *Cancer* 2006; 107:1294.
8. Mauro FR, Foa R, Giannarelli D, et al. Clinical characteristics and outcome of young chronic lymphocytic leukemia patients: a single institution study of 204 cases. *Blood* 1999; 94:448.
9. Robak T, Blonski JZ, Gora-Tybor J, et al. Second malignancies and Richter's syndrome in patients with chronic lymphocytic leukaemia treated with cladribine. *Eur J Cancer* 2004; 40:383.
10. Cheson BD, Vena DA, Barrett J, Freidlin B. Second malignancies as a consequence of nucleoside analog therapy for chronic lymphoid leukemias. *J Clin Oncol* 1999; 17:2454.
11. Tabuteau S, Fernandez J, Garidi R, et al. Richter's Syndrome in B-CLL: report of 37 cases (abstract). *Blood* 1999; 94:306b.
12. Aydin S, Rossi D, Bergui L, et al. CD38 gene polymorphism and chronic lymphocytic leukemia: a role in transformation to Richter syndrome? *Blood* 2008; 111:5646.
13. Rasi S, Spina V, Bruscaggin A, et al. A variant of the LRP4 gene affects the risk of chronic lymphocytic leukaemia transformation to Richter syndrome. *Br J Haematol* 2011; 152:284.

14. Parikh SA, Slager SL, Rabe KG, et al. Heritable Predisposition To Richter Syndrome In Patients With Chronic Lymphocytic Leukemia. Blood (ASH Annual Meeting Abstracts) 2013; 122:2867.
15. Rossi D, Spina V, Cerri M, et al. Stereotyped B-cell receptor is an independent risk factor of chronic lymphocytic leukemia transformation to Richter syndrome. Clin Cancer Res 2009; 15:4415.
16. Rossi D, Spina V, Deambrogi C, et al. The genetics of Richter syndrome reveals disease heterogeneity and predicts survival after transformation. Blood 2011; 117:3391.
17. Fabbri G, Rasi S, Rossi D, et al. Analysis of the chronic lymphocytic leukemia coding genome: role of NOTCH1 mutational activation. J Exp Med 2011; 208:1389.
18. Rossi D, Rasi S, Fabbri G, et al. Mutations of NOTCH1 are an independent predictor of survival in chronic lymphocytic leukemia. Blood 2012; 119:521.
19. Bockorny B, Codreanu I, Dasanu CA. Hodgkin lymphoma as Richter transformation in chronic lymphocytic leukaemia: a retrospective analysis of world literature. Br J Haematol 2012; 156:50.
20. Tsimberidou AM, O'Brien S, Khouri I, et al. Clinical outcomes and prognostic factors in patients with Richter's syndrome treated with chemotherapy or chemoimmunotherapy with or without stem-cell transplantation. J Clin Oncol 2006; 24:2343.
21. Brecher M, Banks PM. Hodgkin's disease variant of Richter's syndrome. Report of eight cases. Am J Clin Pathol 1990; 93:333.
22. Mao Z, Quintanilla-Martinez L, Raffeld M, et al. IgVH mutational status and clonality analysis of Richter's transformation: diffuse large B-cell lymphoma and Hodgkin lymphoma in association with B-cell chronic lymphocytic leukemia (B-CLL) represent 2 different pathways of disease evolution. Am J Surg Pathol 2007; 31:1605.
23. Cherepkhin V, Baird SM, Meisenholder GW, Kipps TJ. Common clonal origin of chronic lymphocytic leukemia and high-grade lymphoma of Richter's syndrome. Blood 1993; 82:3141.
24. Matolcsy A, Casali P, Knowles DM. Different clonal origin of B-cell populations of chronic lymphocytic leukemia and large-cell lymphoma in Richter's syndrome. Ann N Y Acad Sci 1995; 764:496.
25. Armitage JO, Dick FR, Corder MP. Diffuse histiocytic lymphoma complicating chronic lymphocytic leukemia. Cancer 1978; 41:422.
26. van Dongen JJ, Hooijkaas H, Michiels JJ, et al. Richter's syndrome with different immunoglobulin light chains and different heavy chain gene rearrangements. Blood 1984; 64:571.
27. Tsimberidou AM, O'Brien SM, Cortes JE, et al. Phase II study of fludarabine, cytarabine (Ara-C), cyclophosphamide, cisplatin and GM-CSF (FACPGM) in patients with Richter's syndrome or refractory lymphoproliferative disorders. Leuk Lymphoma 2002; 43:767.
28. Dabaja BS, O'Brien SM, Kantarjian HM, et al. Fractionated cyclophosphamide, vincristine, liposomal daunorubicin (daunoXome), and dexamethasone (hyperCVXD) regimen in Richter's syndrome. Leuk Lymphoma 2001; 42:329.
29. Tsimberidou AM, Kantarjian HM, Cortes J, et al. Fractionated cyclophosphamide, vincristine, liposomal daunorubicin, and dexamethasone plus rituximab and granulocyte-macrophage-colony stimulating factor (GM-CSF) alternating with methotrexate and cytarabine plus rituximab and GM-CSF in patients with Richter syndrome or fludarabine-refractory chronic lymphocytic leukemia. Cancer 2003; 97:1711.
30. Tsimberidou AM, Murray JL, O'Brien S, et al. Yttrium-90 ibritumomab tiuxetan radioimmunotherapy in Richter syndrome. Cancer 2004; 100:2195.
31. Rogers KA, Huang Y, Ruppert AS, et al. A single-institution retrospective cohort study of first-line R-EPOCH chemoimmunotherapy for Richter syndrome demonstrating complex chronic lymphocytic leukaemia karyotype as an adverse prognostic factor. Br J Haematol 2018; 180:259.
32. Tsimberidou AM, Wierda WG, Plunkett W, et al. Phase I-II study of oxaliplatin, fludarabine, cytarabine, and rituximab combination therapy in patients with Richter's syndrome or fludarabine-refractory chronic lymphocytic leukemia. J Clin Oncol 2008; 26:196.

33. Mauro FR, Galieni P, Tedeschi A, et al. Factors predicting survival in chronic lymphocytic leukemia patients developing Richter syndrome transformation into Hodgkin lymphoma. Am J Hematol 2017; 92:529.
34. Kharfan-Dabaja MA, Kumar A, Hamadani M, et al. Clinical Practice Recommendations for Use of Allogeneic Hematopoietic Cell Transplantation in Chronic Lymphocytic Leukemia on Behalf of the Guidelines Committee of the American Society for Blood and Marrow Transplantation. Biol Blood Marrow Transplant 2016; 22:2117.
35. Rodriguez J, Keating MJ, O'Brien S, et al. Allogeneic haematopoietic transplantation for Richter's syndrome. Br J Haematol 2000; 110:897.
36. Cwynarski K, van Biezen A, de Wreede L, et al. Autologous and allogeneic stem-cell transplantation for transformed chronic lymphocytic leukemia (Richter's syndrome): A retrospective analysis from the chronic lymphocytic leukemia subcommittee of the chronic leukemia working party and lymphoma working party of the European Group for Blood and Marrow Transplantation. J Clin Oncol 2012; 30:2211.
37. Kharfan-Dabaja MA, Kumar A, Stingo FE, et al. Allogeneic Hematopoietic Cell Transplantation for Richter Syndrome: A Single-Center Experience. Clin Lymphoma Myeloma Leuk 2018; 18:e35.
38. Tsang M, Shanafelt TD, Call TG, et al. The efficacy of ibrutinib in the treatment of Richter syndrome. Blood 2015; 125:1676.
39. Ding W, LaPlant BR, Call TG, et al. Pembrolizumab in patients with CLL and Richter transformation or with relapsed CLL. Blood 2017; 129:3419
40. Jain N, Basu S, Thompson PA, et al. Nivolumab Combined with Ibrutinib for CLL and Richter Transformation: A Phase II Trial. Blood (ASH Annual Meeting Abstracts) 2016; 128:59.
41. Davids MS, Roberts AW, Seymour JF, et al. Phase I First-in-Human Study of Venetoclax in Patients With Relapsed or Refractory Non-Hodgkin Lymphoma. J Clin Oncol 2017; 35:826.