Trends in Cancer Research and Chemotherapy

Mini Review ISSN: 2517-7206

The place of radiotherapy according to clinical subtypes in mycosis fungoides?

Yasemin Benderli Cihan*

Kayseri Education and Research Hospital, Department of Radiation Oncology, Turkey

Cutaneous lymphomas are a group of heterogeneous neoplastic diseases characterized by clonal proliferation of malignant lymphocytes in the skin. The first cutaneous lymphoma is considered to be the cases that started in the skin for the first six months after the diagnosis. 65% of cutaneous lymphomas are T cells and 25% are B cell lymphomas. The two most common subtypes of cutaneous T-cell lymphomas are mycosis fungoides (MF) and Sézary syndrome [1-3].

The etiology and pathogenesis of MF are largely unknown. Genetic, environmental and immunological factors are thought to play a role. The increase in diagnosis and treatment methods leads to an increase in the frequency of MF and especially to the early stage of the disease to become a common health problem. MF has three classical phases: patch, plaque and tumor phase. The early type of patches and / or plaques and only a portion of patients with late-onset tumoral lesions is the classic (conventional) type, MF is the most common form. Apart from this well-known classical type, it is included in the classification of the primary skin lymphomas of the folliculitis, granulomatous MF, pajetoid reticulitis, and other specific clinical and histopathological features. In addition to these, a number of clinicopathologic types have been reported in the literature. The prevalence, clinical features and treatment options of this group are very limited [2-5].

Treatment in patients with MF varies according to the stage of the disease, the prevalence of cutaneous and / or extracutaneous symptoms, the age of the patient, the general condition and the treatment methods previously applied. In 2006, AKATO made recommendations regarding treatment options according to stages. In the light of recent developments in 2017, AKATO updated its recommendations for MF treatment and provided first-line and second-line treatment recommendations according to the stages of the disease [3]. MF is generally divided into stage IA-IIA (early stage) and stage IIB-IV (advanced stage). Internal organ involvement is not observed in early stage MF. Erythematous, scaly patches and infiltrative plaques are observed. The response to treatments for the skin is good. These include topical corticosteroids, chlormethine or retinoids, phototherapy, and radiotherapy (localized or total skin electron beam therapy). The superiority of treatment methods has not been proven. With these treatments, remission is usually achieved, but recurrence is frequent. In advanced stage MF (stage IIB-stage IV), because the disease is more aggressive, mostly systemic therapies and radiotherapy are prominent. Remissions in these stages are generally shorter. Although MF is generally known as a slow course, it may have a rapid progressive character in some of the patients and result in death. Some patients are not able to explain why they show progressive course [2-7].

Local superficial radiotherapy (RT) shows high success in the treatment of early stage MF without the need for adjuvant therapy. Ysebaert, *et al.* evaluated disease-free survival (PFS) and overall survival (OS) in the treatment of total skin electron beam therapy (TSEBT) in 57 patients with T1 and T2 stage MF. Before RT, 25 patients received topical treatment. RT, 6-MeV linear accelerator, 2 Gy / day total 30 Gy dose was applied. A complete response was obtained in 87.5% of T1 and 84.8% of T2 patients. 54.4% of patients developed recurrence of skin within 1 year. 5, 10 and 15-year DFS were found to be 90%, 65% and 42%. As a result, TSEBT was reported to be highly effective in early stage and recurrence without adjuvant therapy [2]. Chinn, *et al.* (T2 and T3 cases, n = 148) compared the MF patients alone using meclorethamine hydrochloride with combination of TEBT and mechlorethamine hydrochloride alone. and reported that the response rate was significantly increased by addition of RT to the treatment [5].

When examined in the literature, TSEBT usually takes 30-36 Gy for 8-10 weeks and . overall response (OR) rate ranged from 94.7 to 100%. In addition, these patients have been reported to have a dose-dependent relationship with complete response rates [1,3,6-8]. In recent years, due to the radiosensitive nature of the tumor, lower dose therapy (10-12 Gy) has been tried to reduce the complications (erythema, desquamation, anhydrosis, alopecia, and xerosis, etc.) that may be related to this treatment [4,6]. Harrison, *et al.* (T2-T4 lesion, n = 102, retrospectively) reported a 90% OR rate (> 50% improvement) in a group of 5-10 Gy. In the subgroup analysis of 10-20 Gy and 20-30 Gy treated subjects, there was no difference in OR rate, recurrence rate and PFS. As a result, it was emphasized that more studies are needed to investigate the role of low-dose RT in combined therapies [4]. Another study evaluating another low dose was reported by Neelis, *et al.* In this study, we compared 8 Gy / 2 fractions and 4 Gy / 2 fractions in patients with MF and reported complete response rate as 92% and 30%, respectively [9]. In the literature, a meta-analysis study evaluating the total dose in RT is not yet performed. In addition, a clinical study evaluating the response to treatment according to histopathological subtypes of RT is not available at present.

As a result, MF has a very rich clinical and histopathological findings. Although the information about the subtypes of MF has increased in recent years, the current large series of studies on the frequency of these are very limited. It is not clear whether there are any differences in the course of the disease according to MF subtypes and which treatment will be applied. RT at MF is an effective and reliable treatment in all stages. However, the fact that RT is not fully aware

Correspondence to: Yasemin Benderli Cihan, Kayseri Education and Research Hospital, Department of Radiation Oncology, 38010 Kayseri, Turkey, Tel: +90 352 3368884; H/P: +90 536 216 9987; E-mail: cihany@erciyes.edu.tr

Received: January 04, 2019; **Accepted:** March 05, 2019; **Published:** March 08, 2019

of the extent to which it prevents disease progression in MF subtypes prevents the emergence of clear algorithms related to treatment. There is a need for large-scale clinical studies.

References

1. Lovgren ML, Scarisbrick JJ (2018) Update on skin directed therapies in mycosis fungoides. *Chin Clin Oncol* 8: 7.
2. Ysebaert L, Truc G, Dalac S, Lambert D, Petrella T, et al. (2004) Ultimate results of radiation therapy for T1- T2 mycosis fungoides (including reirradiation). *Int J Radiat Oncol Biol Phys* 58: 1128-1134.
3. Trautinger F, Eder J, Assaf C, Bagot M, Cozzio A, et al. (2017) European Organisation for Research and Treatment of Cancer consensus recommendations for the treatment of mycosis fungoides/Sézary syndrome - Update 2017. *Eur J Cancer* 77: 57-74.
4. Harrison C, Young J, Navi D, Riaz N, Lingala B, et al. (2011) Revisiting low-dose total skin electron beam therapy in mycosis fungoides. *Int J Radiat Oncol Biol Phys* 81: e651-657. [Crossref]
5. Chinn DM, Chow S, Kim YH, Hoppe RT (1999) Total skin electron beam therapy with or without adjuvant topical nitrogen mustard or nitrogen mustard alone as initial treatment of T2 and T3 mycosis fungoides. *Int J Radiat Oncol Biol Phys* 43: 951-958.
6. Chowdhary M, Song A, Zaorsky NG, Shi W (2019) Total skin electron beam therapy in mycosis fungoides-a shift towards lower dose? *Chin Clin Oncol* 8: 9. [Crossref]
7. Jang BS, Kim E, Kim IH, Kang HC, Ye SJ (2018) Clinical outcomes and prognostic factors in patients with mycosis fungoides who underwent radiation therapy in a single institution. *Radiat Oncol J* 36: 153-162.
8. Kinoshita-Ise M, Ouchi T, Izumi E, Kawaguchi O, Nagao K, et al. (2018) Combination of low-dose total skin electron beam therapy and subsequent localized skin electron beam therapy as a therapeutic option for advanced-stage mycosis fungoides. *Clin Exp Dermatol* 43:437-440.
9. Neelis KJ, Schimmel EC, Vermeer MH, Senff NJ, Willemze R, et al. (2009) Low-dose palliative radiotherapy for cutaneous B- and T-cell lymphomas. *Int J Radiat Oncol Biol Phys* 74: 154-158. [Crossref]