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POS0289

CANCER RISK IN IMMUNOSUPPRESSED SCLERODERMA PATIENTS: A PROPENSITY SCORE MATCHING ANALYSIS

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Background: An increased incidence of cancer in patients with systemic sclerosis (SSc) is well-established¹. Current knowledge about the onco-transforming power of immunosuppressive treatments in both non-rheumatological and rheumatological pathologies, suggests an increased incidence of hematological and solid neoplasms². Evidences on the possible role of the immunosuppressants in the onset of cancer during SSc are lacking.

Objectives: To evaluate the incidence of malignancies in SSc patients exposed to immunosuppressive therapy.

Methods: The incidence of neoplasia in a cohort of 600 patients with SSc was evaluated retrospectively. Patients diagnosed with malignancy within 36 months from SSc onset were excluded from the analysis since suspected for paraneoplastic form. Patients exposed to methotrexate, cyclophosphamide, azathioprine and mycophenolate were confronted with a group comparable for age at onset, sex, disease variant, autoantibodies and exposure to other disease-specific therapies, using propensity score matching analysis. The considered follow-up was between the clinical onset and the diagnosis of cancer or the last available visit or the twenty-fifth year of illness.

Results: The analysis was carried out on 526 patients observed for an average period of 12.1 ± 6.0 years (males 9.5%, age at onset 49.0 ± 15.3 years); 24.9% had diffuse cutaneous variant of the disease and 39.0% and 34.8% were respectively positive for anti-centromere and anti-Scl70 antibodies. During the follow-up, 19.0% of patients were exposed to cyclophosphamide, 15.3% to azathioprine, 14.4% to methotrexate and 11.6% to mycophenolate mofetil. Sixty-five cancer diagnoses were made after the 36th month from onset (incidence 1.02: 100 patients/year), comprising 16 mammary cancers, 12 cancers of the gastro-intestinal tract, 11 cancers of the head-neck area, 10 cancers of the lungs, 9 cases of skin-cancer, 5 haematological malignancies and 1 brain tumour. The incidence of cancers did not differ in relation to treatment with cyclophosphamide ($X^2 = 0.001$, $p = 0.961$), azathioprine ($X^2 = 2.141$, $p = 0.143$), mycophenolate mofetil ($X^2 = 0.001$, $p = 0.993$) or methotrexate ($X^2 = 0.920$, $p = 0.337$) (Figure 1).

Conclusion: Our data are consistent with an increased incidence of neoplasms in the course of SSc, with a rate that appears almost doubled compared to the general Italian population with similar sex and age distribution (0.55: 100 patients/year; Italian

Association of Tumor Registries data³). In our SSc cohort this risk is independent of exposure to immunosuppressive drugs commonly used for the treatment of scleroderma disease.

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POS0290

PREDICTING RISK FACTORS OF MALT LYMPHOMA IN SJÖGREN'S SYNDROME

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Background: Primary Sjögren Syndrome (SS) is a slowly progressive systemic autoimmune disease complicated by lymphoma, with mucosa associated lymphoid tissue (MALT) type being the most common lymphoma form. Several predictors related to pSS associated lymphomas have been described, but there are no studies focusing on specific risk factors for the MALT histologic subtype.

Objectives: To identify predictors at SS diagnosis for MALT lymphoma development in pSS patients using simple clinical features.

Methods: From 815 SS patients of a single center fulfilling the 2016 ACR/EULAR criteria, those with subsequent development of MALT lymphoma according to the 2016 WHO classification were identified and matched in 1:2 ratio, with non-lymphoma SS control patients according to age, disease duration from SS diagnosis and gender. Lymphoma patients diagnosed within a year from SS diagnosis were excluded from the current study. Clinical, laboratory, histologic data as well as the ESSDAI scores at the time of SS diagnosis were recorded and compared between lymphoma and non-lymphoma patients. Independent lymphoma predictors were identified by a data driven Fast Correlation Based Feature selection (FCBF)/Logistic Regression (LR) algorithm.

Results: A unified dataset of 57 MALT lymphoma patients and 114 non lymphoma controls along with 39 features/variables was generated. The median age of SS diagnosis and the disease duration from SS diagnosis to lymphoma diagnosis (lymphoma group) or last follow up (control group) was 50,5 years old (range 25-77) and 7 years (range 0- 30) for the control group and 50 years old (range 24-70) and 8 years (range 1 -30) for the lymphoma group, respectively. MALT lymphoma patients presented more frequently with palpable purpura (23,2% vs 5,3% $p=0,001$), cryoglobulinemia (30,2% vs 1,6% $p<0,0001$), low C4 serum levels (62,9% vs 32,1% $p=0,0003$), rheumatoid factor (76,9% vs 56,1% $p=0,01$), anti La/SSB antibodies (33,9% vs 50,8% $p=0,049$) and higher median ESSDAI score (5 vs 2, $p<0,0001$). In contrast, autoimmune thyroiditis was more prevalent in controls (48,2% vs 18,6%, $p=0,004$). The FCBF/LR model revealed cryoglobulinemia ($p=0,03$) and ESSDAI at SS Diagnosis ($p<0,001$) as the only independent lymphoma predictors.

Conclusion: MALT is the predominant pSS related lymphoproliferative histologic type, associated with systemic disease activity and vasculitic manifestations at SS diagnosis. Cryoglobulinemia and ESSDAI score were proven independent risk factors for MALT lymphoma development.

Table 1. An FCBF-based multivariable logistic regression analysis results for investigating risk factors for MALT lymphoma development

Prominent feature	Regression coefficient	Odds ratio	p-value	CI low	CI upper
Cryoglobulinemia	1.67	5.342	0.033*	1.18	24.327
Total ESSDAI at diagnosis	0.28	1.318	<0.001*	1.208	1.439
Kidney involvement	0.07	1.069	0.5	0.101	0.351

* $p < 0.05$ (95% confidence interval). The rest of the features that participated in the analysis include the following: Palpable purpura, Low C4, Salivary gland enlargement, Lacrimal gland enlargement, ANA Titers, RF, Focus score at Sjögren diagnosis, PNS involvement, Anti-La, Disease duration from SS onset to SS diagnosis, Neutrophils<1500, Autoimmune thyroiditis, Lung involvement – interstitial disease Type, Lymphocytes<1000, Lymphadenopathy fixed, Arthralgias, Dry eyes, Raynaud, Gender, Age at Sjögren diagnosis, Dry mouth, Aca, Hb<12.5g/dL, ANA, Disease duration from SS Diagnosis to Lymphoma diagnosis or last follow up, Anti-Ro, Arthritis, WBC<4000/ μ L, Lung involvement bronchocentric disease, Interstitial renal disease, PLTs<100.000/ μ L, Liver involvement-PBC, Liver involvement–autoimmune hepatitis, CNS involvement. •AUC=0.78

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POS0291

THE IMPACT OF DRUG INDUCED AND OTHER RHEUMATIC MUSCULOSKELETAL DISORDERS (MD) ON THE QUALITY OF LIFE (QOL) OF CANCER PATIENTS RECEIVED ANTICANCER DRUG TREATMENT

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Background: Pts with cancer may have MD that can be caused by neoplastic/paraneoplastic disease, rheumatic diseases or be induced by anticancer drug treatment. There is no data about MD influence on the QoL of cancer patients. The EORTC QoL questionnaire (QLQ)-C30 is a valid questionnaire designed to assess different aspects (Global health (GH), Functional (FS) and symptoms (SS) scales) that define the QoL of cancer patients [1].

Objectives: The objective of the study was to assess the impact of drug induced and other types of MD on the QoL of cancer patients that received anticancer drug treatment by using of EORTC QLQ-C30 v3.0.

Methods: The sampling of 123 pts (M/F – 40/83; mean age 54.4±12.8) with breast (32.5%), gastrointestinal (17%), ovary (8%), lung (7%) and other cancer was observed by rheumatologist in the oncology outpatient clinic. All pts received anticancer drug treatment: chemotherapy (104 pts), target therapy (16 pts) checkpoint-inhibitors (14 pts), hormone therapy (13 pts) in different combinations. 102(82.9%) of 123pts had MD include arthritis (12 pts), synovitis (5 pts), arthralgia (66 pts), periarthritis (34 pts), osteodynia (13 pts). There were 58 pts (group 1; M/F – 14/44; mean age 52.5±12.2) with anticancer drug treatment induced MD and 44 pts (group 2; M/F – 16/27; mean age 57.6±13.5) with other type of MD include 26 pts with skeletal metastasis. The were 21 pts (group 3; M/F – 10/11; mean age 52.9±11.1) without MD. All pts fulfilled EORTC QLQ-C30 v3.0 (tab.1).

Table 1. The median [Q1;Q3] of results of GH, SS and FS of EORTC QLQ-C30

Scale	Subscale	Group1	Group2	Group3
GH		58.3[50;58]	58.3[41.7;83.3]	50[50;66.7]
FS*	Physical functioning	73.3[60;86.7]	73.3[66.7;86.7]	86.7[80;93]
	Role functioning	66.7[66.7;100]	83.3[50;100]	100[83;100]
	Emotional functioning	83.3[66.7;100]	75[66.7;91.7]	91.6[83.3;100]
	Social functioning	83.3[66.7;100]	83.3[50;100]	100[83.3;100]
SS*	Pain	33.3[0;50]	16.7[0;33.3]	0[0;16.7]

*There are only the scores that had got a statistical difference between the groups.

Kruskal-Wallis H and post-hoc (Dwass-Steel-Critchlow-Fligner (DSCF) pairwise comparisons) tests for data analysis were performed.

Results: A Kruskal-Wallis H test has shown a statistically significant difference in physical ($\chi^2(2)=7.54$; $p=0.023$), role ($\chi^2(2)=9.87$; $p=0.007$), emotion ($\chi^2(2)=7.69$; $p=0.021$) functioning and pain ($\chi^2(2)=8.44$; $p=0.015$) scores between the different groups. A post-hoc test with DSCF pairwise comparisons of median has shown a statistically significant difference between 1 and 3 groups ($W=3.904$; $p=0.016$) for physical functioning, between 2 and 3 groups ($W=3.35$; $p=0.004$) for role functioning, between 2 and 3 groups ($W=4.03$; $p=0.012$) for emotional functioning, between 1 and 3 groups ($W=3.97$; $p=0.014$) for pain scale.

Conclusion: The study has shown that MD associated with anticancer drug treatment adversely affected the QoL of cancer patients received anticancer drug treatment by reducing a physical functioning and by increasing pain scores. Presence of other types of MD adversely affect the QoL by reducing emotional and role functioning.

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POS0292

OSTEOPOROSIS IN BREAST CANCER PATIENTS ON AROMATASE INHIBITORS THERAPY: ABOUT 200 CASES

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Background: Breast cancer is the most common cancer affecting women both before and after the menopause. Aromatase inhibitors (AIs) used as adjuvant therapy cause bone loss and increase the risk of osteoporosis (OP) (1).

Objectives: To assess the bone status and the frequency of OP in breast cancer patients using AIs.

Methods: We conducted a retrospective study in the rheumatology department, over 5 years (2016-2020).

Inclusion criteria: patients followed for breast neoplasm in oncology department on AIs therapy and referred to rheumatology department for bone evaluation.

All of these patients underwent an evaluation of bone mineral density (BMD) and phosphocalcic assessment.

Exclusion criteria: patients treated by another type of hormone therapy and having other risk factors for OP.

Results: 200 breast cancer women were enrolled for the study, 92 patients (46%) were treated with AIs, the average age was 58.22 years (41 - 75 years) with an average age of discovery of the breast cancer of 46.75 years and the average time between the start of AIs therapy and the diagnosis of OP was 21.6 months. the characteristics of the patients are summed up in Table 1. 97% of patients were postmenopausal and 38% of them had menopause secondary to treatment.

In AIs users, 85 patients (92.3%) were osteoporotic, and 11% had bone fractures. In regard to osteodensitometry measurement, lumbar spine was the most affected site (88%) with mean T score of -2.98 and mean BMD of 0.854, followed by femoral neck (17%) with mean T score of -2.8 and mean BMD of 0.740 and total hip (14%) with mean T score of -3.10 and mean BMD of 0.497.

The cancer was metastatic in 15.18% patients, 75% of the group had bone metastasis and 25% had visceral metastasis.

The phosphocalcic status of the osteoporotic patients was: mean calcemia: 92.83 mg / l, mean calciuria: 131.8 mg / 24h, mean phosphatemia: 48.09 mg / l, mean 25 OH Vit D level: 19.78 ng / ml, mean PTH: 79 pg / ml.

Osteoporotic patients were treated with bisphosphonates, 60% women had received Alendronate, 17% Risedronate and 12% Zoledronate in addition to dietary measures and correction of calcium and vitamin D deficiency.

Conclusion: AIs are correlated with a high risk of OP and fractures in 30% of patients (2), the frequency of OP in our series is estimated at 42.5%.

Assessment of bone status and OP clinical risk factors should be systematic in all breast cancer patients receiving adjuvant AIs therapy.

Bisphosphonates appear to be beneficial in treating secondary OP, in preventing bone fractures, and in reducing the incidence of breast cancer bone metastases.

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Table 1. Characteristics of osteoporotic patients using AIs therapy

	Results
Total of patients	92 (46%)
Mean age	58.22 years
Mean age of breast cancer diagnosis	46.75 years
Delay between AIs therapy and OP	21.6 months
Post menopausal patients	97%
Menopausis due to AIs	38%
Osteoporotic patients	85 (92.3%)
Fractures	11%
Sites of OP in osteodensitometry	
lumbar spine	88%
femoral neck	17%
total hip	14%
Cancer metastasis	15.18%
Bone	75%
Visceral	25%
Phosphocalcic status (mean values)	
calcemia	92.83 mg / l
calciuria	131.8 mg / 24h
phosphatémie	48.09 mg / l
25 OH vitaminD	19.78 ng / ml
PTH	79 pg / ml
Biphosphonates therapy	
Alendronate	60%
Risedronate	17%
Zoledronate	12%

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