AB0098

ASSOCIATED FACTORS IN ONE-YEAR MORTALITY IN PATIENTS WITH SMALL VESSEL SYSTEMIC VASCULITIS

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Background: The highest mortality rates in patients with small vessel systemic vasculitis occur within the first year after the diagnosis, however associated factors have been scarcely studied in our population.

Objectives: To identify mortality associated factors at the time of diagnosis in patients with small vessel systemic vasculitis.

Methods: Retrospective cohort (2009-2020) involving 81 patients diagnosed with systemic small vessel vasculitis. Demographic, clinical and biochemical parameters were studied as potential factors associated with one-year mortality.

Results: Of the total of patients (n=81), 36 (44.4%) had generalized granulomatosis with polyangiitis, 32 (39.5%) had localized granulomatosis with polyangiitis and 5 (6.2%) had early systemic granulomatosis with polyangiitis, 7 (8.6%) had microscopic polyangiitis and 1 (1.25%) had eosinophilic granulomatosis with polyangiitis. Twenty-two deaths (27%) were observed, 14 of them (63.6%) happened within the first year of diagnosis. The leading cause of death was infection (64%). Patients who died within the first year of diagnosis had a higher frequency of hypoalbuminemia (p=0.05) and also presented hemoglobin lower than 10.8 g/dL (p=0.035) in comparison with those who died after the first year of diagnosis. Remission induction treatment did not differ between both groups.

Conclusion: Our study suggests that hypoalbuminemia and anemia are factors associated with a higher mortality within the first year after the diagnosis in patients with systemic small vessel vasculitis which contrast with previously reported data. The study design and the reduced number of patients are two major limitations of the study.

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Rheumatoid arthritis - prognosis, predictors and outcome

AB0099

IN VIVO BONE MICROARCHITECTURE ANALYSIS IN A PSORIATIC ARTHRITIC PATIENT BEFORE AND AFTER ANTI-TNFA TREATMENT

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Background: In psoriatic arthritis (PA), a systemic inflammatory phenomenon, mainly mediated by TNF α , is characterized by a bone loss due to osteoclastic stimulation. Anti-TNF α treatment should inhibit this phenomenon having a role on systemic bone loss. Ultra-high field MRI (UHF MRI) may be a tool of choice for the quantification of bone microarchitecture (BM) *in vivo*.

Objectives: The purpose of the present study was to quantify BM using UHF MRI in a PA patient and to follow up changes related to anti-TNF α treatment.

Methods: An 18 years-old untreated PA patient with knee arthritis and 7 gender-matched healthy controls [21.6 $\pm$ 0.8 years] were scanned using a gradient echo sequence at UHF MRI (TR/TE = 15/4.36ms). After a year of Adalimumab treatment, the patient underwent a second UHF MRI. BM analysis was performed on sagittal planes in regions corresponding to tendon insertion: proximal and distal patellar, and posterior tibial. A PET-FNa imaging was also performed before and after treatment. BM was characterized using the bone volume fraction (BVF), the trabecular thickness (TbTh) and the spacing (TbSp) and number of trabeculae (TbN). Student T-test was used for the statistical analysis and a p-value < 0.01 was considered as significative.

Results: PET-FNa recorded before the treatment illustrated hypermetabolic areas which resumed after the treatment while the patient was in remission. The BM parameters are shown in figure 1. The BM parameters quantified before the treatment were very different as compared to controls. BVF was significantly lower (-33 $\pm$ 23%), TbSp and TbN were significantly distinct (-27 $\pm$ 3% and +27 $\pm$ 9%) for all ROIs but proximal patellar, while TbTh was in the normal range

(-2 $\pm$ 2%). After 1 year of treatment, BM parameters were significantly improved. BVF was no longer different than controls (-8 $\pm$ 6%). Similarly, TbSp and TbN were in the normal range (+13 $\pm$ 12% and -15 $\pm$ 10%) for all ROIs but posterior tibial. TbTh (-5 $\pm$ 3%) was only significantly decreased for the distal patella.

		Healthy	P. before treatment	P. after treatment
Proximal Patella	BVF	0.393 $\pm$ 0.008	0.339 $\pm$ 0.018 *	0.401 $\pm$ 0.010
	TbTh	0.254 $\pm$ 0.013	0.254 $\pm$ 0.022	0.266 $\pm$ 0.014
	TbSp	0.364 $\pm$ 0.032	0.477 $\pm$ 0.058	0.365 $\pm$ 0.008
	TbN	1.550 $\pm$ 0.074	1.301 $\pm$ 0.136	1.493 $\pm$ 0.073
Distal Patella	BVF	0.355 $\pm$ 0.035	0.222 $\pm$ 0.064 *	0.328 $\pm$ 0.027
	TbTh	0.261 $\pm$ 0.010	0.250 $\pm$ 0.015	0.285 $\pm$ 0.004 *
	TbSp	0.469 $\pm$ 0.117	0.651 $\pm$ 0.057 *	0.532 $\pm$ 0.064
	TbN	1.366 $\pm$ 0.114	0.994 $\pm$ 0.090 *	1.116 $\pm$ 0.083
Posterior Tibia	BVF	0.381 $\pm$ 0.009	0.307 $\pm$ 0.016 *	0.335 $\pm$ 0.018
	TbTh	0.258 $\pm$ 0.008	0.260 $\pm$ 0.009	0.267 $\pm$ 0.012
	TbSp	0.426 $\pm$ 0.060	0.594 $\pm$ 0.012 *	0.570 $\pm$ 0.016 *
	TbN	1.468 $\pm$ 0.073	1.185 $\pm$ 0.047 *	1.241 $\pm$ 0.029 *

Table 1. Data are presented as mean $\pm$ SD. "P." refers as patient. BVF: Bone volume fraction, TbTh: Trabecular Thickness, TbSp: Trabecular Space, TbN: Trabecular number. * indicates a statistically significant difference (p < 0.01) with the Healthy reference values.

Conclusion: Our results illustrated knee microstructure alterations in a PA patient and a normalization after a year of treatment. The abnormalities initially observed were not only localized in the hypermetabolic regions identified by PET-FNa, suggesting that the bone loss was global and not related to inflammatory sites.

Using UHF MRI, we highlighted and quantified *in vivo* BM anomalies in a patient with an inflammatory rheumatism together with the reversibility after one year of treatment.

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AB0100

EVALUATION OF PGA LEVEL FOR CLINICAL REMISSION WITH BOOLEAN CRITERIA, 10MM OR 20MM?

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Background: Patient's global assessment (PGA) is one important component of Boolean composite criteria for remission in treat with rheumatoid arthritis (RA). However, PGA no more than 10mm is sometimes obstacle to attain clinical remission. In recent few years, one opinion that PGA no more than 20mm may be comparable as no more than 10mm.

Objectives: The aim of this study is to analyze how difference of these PGA level affect disease activity and daily activities in living, and evaluate which is optimal for the remission with Boolean remission criteria from real world setting.

Methods: RA patients who were followed up for more than three years in the institute were picked up in the study. Each patient was monitored with tenderness joint count (TJC), swollen joint count (SJC), PGA, evaluator's global assessment (EGA), serum C-reactive protein level (CRP), calculated disease activity score with simplified disease activity index (SDAI), Health Assessment Questionnaire Disability Index (HAQ-DI), and pain score using visual analog scale (PS-VAS) every consulted time from the first encounter (Baseline). Patients were classified according to achievement of Boolean remission criteria. Group 1: a patient group who attained Boolean remission with TJC $\leq$ 1, SJC $\leq$ 1, CRP $\leq$ 1mg/dl, and PGA $\leq$ 1 (G-1), Group 2: a patient group who could not attain the Boolean remission used in the G-1 evaluation, but could attained another Boolean remission with TJC $\leq$ 1, SJC $\leq$ 1, CRP $\leq$ 1mg/dl, and PGA $\leq$ 2 (G-2), and Group 3: a patient group who could not attain Boolean remission for neither criterion.

Mean values of measured parameters at Baseline and after the Baseline were compared statistically with Student T-test. Mean values of the same parameters in the G-1 and G-2 at the time of attain Boolean remission for each criteria, mean values of each of these parameters thereafter, and changes of these parameters were compared statistically with Student T-test.

Results: A total of 438 patients 385 in the G-1 group, 16 in the G-2 group, and 37 in the G-3 group, were recruited. In parameters at Baseline, level of TJC, SJC, PGA, EGA, SDAI, and HAQ-DI in the G-1 was significantly lower than in the G-3, whereas no significant differences in any parameters demonstrated between in the G-2 and G-3. Level of HAQ-DI, and PS-VAS after Baseline in the G-1 was

lower than in the G-3, whereas no significant difference of these parameters after Baseline demonstrated between in the G-2 and G-3. TJC, SJC, PGA, and EGA demonstrated significant less level in the G-1 than in the other two groups. The mean SDAI score at the time of first achievement of Boolean remission in the G-1 and G-2 were 1.08 and 2.57, respectively. The mean value of SDAI score after remission in the G-1 and G-2 were 3.35 and 6.44, respectively. These values and PS-VAS including change of the SDAI score demonstrated significant difference between the two groups ($p < 0.01$), whereas HAQ-DI in the two groups demonstrated no significant difference.

Conclusion: These results suggested that setting PGA as no more than 10mm should be reasonable for the evaluation of clinical remission with the Boolean criteria.

Disclosure of Interests: None declared

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AB0101

THE IMPACT OF TIME SPAN TO ACHIEVE BOOLEAN REMISSION FOR MAINTAINING DISEASE ACTIVITY AFTER ACQUISITION IN RHEUMATOID ARTHRITIS PATIENT

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Background: Boolean remission criteria is one most popular and stringent criteria in treating patient with rheumatoid arthritis (RA), because it may guarantees a stable clinical course after attaining remission.

Objectives: Impact of time span from initiation to achieving Boolean remission on maintaining disease activity, daily activities, and quality of life after attaining Boolean remission was investigated from daily clinical practice data.

Methods: 685 patients with RA since August 2010 under the T2T strategy were treated. They were monitored for their TJC, SJC, PGA, EGA, CRP, and disease activity indices such as CDAI, SDAI, DAS28, and Boolean criteria at every visit. HAQ-DI score, pain score using visual analog scale (PS-VAS), and EQ-5D were also monitored, and the quality of life score (QOLS) calculated from EQ-5D was determined at every visit from the time of diagnosis (baseline).

Of 685 patients, 465 patients had achieved Boolean remission >1 times, and were consecutively followed up for >3 years. These patients were enrolled in the study. Time span from the first visit to first Boolean remission was calculated. The relationship between the time span and each of background parameters, and the relationship between the time span and each of the mean values of the SDAI score, HAQ score, PS-VAS, SHS, and QOLS at the first Boolean remission and thereafter was evaluated statistically.

Patients were subsequently divided into the $G \leq 6$ and $G > 6$ groups based on the achievement of first Boolean remission within two groups: time span $G \leq 6$ months and $G > 6$ months. The two groups were compared with regard to the SDAI score, HAQ score, PS-VAS, SHS, and QOLS at first visit and at the time of first Boolean remission, and the mean values of these parameters after remission were evaluated statistically. Moreover, changes of these parameters and the mean Boolean remission rate after the first remission, and SDAI remission rate at the first Boolean remission to thereafter were compared between the two groups statistically.

Results: Out of 465 patients, females comprised 343 (73.7%), and the mean age was 67.8 years (range, from 21–95 years). The mean disease duration at first visit was 6.1 years (range, from 1 months–45 years). The mean follow up length was 88.1 months (range: 36–122 months; median: 85 months) and mean time span from the first visit to the first Boolean remission was 8.1 months. The mean SDAI score, HAQ score, PS-VAS, and the QOLS at first visit were 13.3, 0.467, 33.2, and 0.834, respectively. Among the study parameters, PS-VAS and QOLS were significantly correlated with the time span. For parameters at the first Boolean remission, HAQ-DI score, PS-VAS, and QOLS demonstrated significant correlation with the time span, whereas SDAI, HAQ-DI score, PS-VAS, SHS, and QOLS after the Boolean remission demonstrated significant correlation with the time span.

The comparison between the $G \leq 6$ and the $G > 6$ groups revealed that the disease duration, HAQ score, and PS-VAS at baseline in the $G > 6$ were significantly higher than that in the $G \leq 6$ group, and QOLS in the $G \leq 6$ group was significantly higher than that in the $G > 6$ group at baseline. Similarly, the HAQ score and PS-VAS at the first Boolean remission in the $G > 6$ group were significantly higher than that in the $G \leq 6$ group, whereas QOLS in the $G \leq 6$ group demonstrated no significant difference compared with that in the $G > 6$ group.

The mean value of the SDAI score after the first Boolean remission in the $G > 6$ group was significantly higher than that in the $G \leq 6$ group. Similarly, the SDAI score, HAQ score, and PS-VAS after the first Boolean remission in the $G > 6$ group were also significantly higher than those in the $G \leq 6$ group, and the mean value of the QOLS in the $G \leq 6$ group were significantly higher than that in the $G > 6$ group. The Boolean remission rate and SDAI remission rate after the first Boolean remission were significantly higher in the $G \leq 6$ group than those in the $G > 6$ group.

Conclusion: Attaining Boolean remission ≤ 6 months for RA has significant benefit for more stable disease control, that leads good maintenance of ADL.

Disclosure of Interests: None declared

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AB0102

EVALUATOR'S GLOBAL ASSESSMENT REFLECTS DISEASE ACTIVITY BUT NOT LINEARLY CORRELATES WITH DAILY ACTIVITY OR QUALITY OF LIFE COMPARED TO PATIENT' GLOBAL ASSESSMENT

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Background: Evaluator's global assessment (EGA) is the one component of indexed disease activity evaluation assessed by the rheumatologist for treatment of rheumatoid arthritis (RA). It does not included in the Boolean remission criteria nor 28-joints disease activity score (DAS28), however it is widely recognized among rheumatologist as an only comprehensive and objective assessment parameter.

Objectives: The aim of this study is to evaluate how EGA correlates with other components and the influence of EGA on disease activity and daily activity, and quality of life.

Methods: A total of 24,075 times of monitoring out of 683 RA patients who were followed up for more than three consecutive years was performed. Contents of monitoring included tenderness joint count (TJC), swollen joint count (SJC), patient's global assessment (PGA), EGA, C-reactive protein (CRP), and calculated values of DAS28, SDAI, composite index of Boolean evaluation, pain score with visual analog scale (PS-VAS), Health Assessment Questionnaire Disability Index (HAQ-DI), and quality of life score (QOLS) calculated from Euro-QOL questionnaire with 5th dimensions. Each measurement was classified with the EGA score divided by one increment from zero to ten. Mean values of DAS28, CDAI, SDAI, remission rate of these indices and Boolean remission rate, and mean values of PS-VAS, HAQ-DI, and QOLS were statistically evaluated. Results were compared to the results that was analyzed in according to the PGA score substituted with the EGA score.

Moreover, EGA at the time of Boolean remission of the patients who achieved Boolean remission at least once during treating were picked up. Patients were classified according to the EGA level with 0.5 increment from zero. Mean value of TJC, SJC, PGA, EGA, SDAI, Boolean remission rate, HAQ-DI, and PS-VAS after attaining Boolean remission were compared statistically.

Results: Number of measures counted 15424, 2001, 3688, 1731, 664, 293, 144, 88, 29, 2, and 11 for each level of EGA. The EGA score tended to concentrate more in zero to two in comparing to the PGA score. Mean DAS28, CDAI, and SDAI demonstrated significant increase as the EGA level increased, and remission rate of the all indices including Boolean demonstrated significant decrease as the EGA level increases ($p < 0.01\%$). CDAI, SDAI, and Boolean remission rate demonstrated zero percent from two. Mean value of PS-VAS and HAQ-DI score demonstrated also significant decrease as the EGA level increases, and QOLS demonstrated significant decrease as the EGA level increases ($p < 0.01\%$). However, these tendency showed more irregular compared to that analyzed with the PGA score. Correlation coefficients with regarding to the EGA score was always less than that with regarding to the PGA score.

In the patients who achieved Boolean remission, EGA levels were divided with 294 with zero (G-0) and 118 with 0.5 (G-.5), whereas 71 could not achieve Boolean remission. Average TJC ($p < 0.05$), SJC ($p < 0.001$), EGA ($p < 0.001$), CRP ($p < 0.05$), and SDAI ($p < 0.01$) level in the G-0 group demonstrated significant less than in the G-.5 group, whereas PGA, Boolean remission rate, HAQ-DI, and PS-VAS demonstrated no significant difference in between the two groups.

Conclusion: It is more reliable to estimate daily activity and quality of life from the PGA score than to estimate from the EGA score. EGA correlates with SJC and CRP more strongly than with TJC and CRP. EGA does not reflect HAQ-DI and PS-VAS.

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AB0103

THE ACCURACY OF ADMINISTRATIVE HEALTH DATA FOR IDENTIFYING PATIENTS WITH RHEUMATOID ARTHRITIS: A VALIDATION STUDY USING MEDICAL RECORDS IN WESTERN AUSTRALIA

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Background: The use of large administrative health datasets is increasingly important in Rheumatology for disease trends and outcome research (1). We established the West Australian Rheumatic Disease Epidemiological Registry