Background: Psoriasis (P) may be complicated by psoriatic arthritis (psoriatic arthropathy (PsA), in 15 % of psoriatic patients [1]. The risk of mortality is increased in PsA outpatients compared to the general population [2].

Objectives: The aim of this study was to determine the mortality of PsA or associated diseases in an in-patient autopsy population.

Methods: At the National Institute of Rheumatology 11860 patients died between 1968 and 1998; among them 12 patients with PsA (females 6, mean age of 68.17 years, range 86 – 52, onset of PsA 53.60, average duration of PsA 15.40 years; males 6, mean age of 62.83 years, range 82 – 33, onset of PsA 46.67, average duration of PsA 3.67 years). All patients were autopsied.

The basic disease, complication(s), and cause of death were determined by a detailed review of extensive histological material, all the available clinical and pathological reports retrospectively. From each patient a total of 50-100 tissue blocks of 16 organs were studied microscopically.

PsA was confirmed clinically according to the criteria of the ACR updated by Sukfa (2019) [1].

Results: The cause of death was related to PsA only in one (8.33 %) of 12 patients; a 33 year old man who died of pulmonary embolism after synovectomy. In 11 (91.66 %) of 12 PsA patients the cause of death was related to allied diseases namely atherosclerosis (Ath) in 9 (75 %), tuberculosis complicated by miliary dissemination (TB- mTB) in 1 (8.33 %), and alcoholic cirrhosis (AC) in 1 (8.33 %). Ath was complicated by hypertension (HT) and adult type diabetes mellitus (DM) in 4, was associated with TB in 1 and with AC in 1 of 9 patients; HT and DM were present in one PsA patient without Ath (Table 1).

AA amyloidosis (AAa) complicated PsA in 2 (16.66 %) of 12 PsA patients; in one case due to the long standing and severe inflammation of PsA, and in the other case the AAa was associated with TB and mTB.

Table 1.

P-PsA Basic disease (leading to death)	Complication(s)	Cause of death
1 P-PsA Ath, TB	Adhesive pericarditis and pleuritis	Circulatory failure
2 P-PsA Ath-HT-DM	Postoperative complication	Pulmonary embolism
3 P-PsA Ath-HT-DM	Brain necrosis, Pulmonary embolism	Circulatory failure
4 P-PsA Ath	Purulent bronchitis-Bronchopneumonia	Circulatory failure
5 P-PsA TB-mTB	AAa, Arosion bronchial artery	Massive bronchial bleeding
6 P-PsA Ath	AAa, Coronary artery thrombosis	Myocardial infarction
7 P-PsA	Synovectomy	Pulmonary embolism
8 P-PsA Ath-HT-DM	Coronary artery thrombosis	Myocardial infarction
9 P-PsA Ath	Myocardial fibrosis	Circulatory failure
10 P-PsA Ath, Alcoholic cirrhosis	Ascites, Purulent bronchitis	Circulatory failure
11 P-PsA Alcoholic cirrhosis, HT-DM	Ascites	Hepatorenal syndrome
12 P-PsA Ath-HT-DM	Myocardial fibrosis	Circulatory failure

Conclusion: In our autopsy population Ath (with or without HT and DM) was the most important basic disease leading to circulatory failure and death of PsA patients. Diseases of the circulatory system were also the most common cause of death in Wong's outpatient PsA population as well [2].

PsA is not a mild disease, but is not a life-threatening complication of P, however in association with Ath, HT, DM or TB it may increase mortality, as was also found by Arumugam and McHugh (2012): 'the mortality of PsA may be increased in a more severe disease' [3].

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BONE MINERAL DENSITY, TRABECULAR BONE SCORE AND PROXIMAL FEMUR 3D-DXA ANALYSIS IN PSORIATIC DISEASES

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Background: current data regarding areal bone mineral density (aBMD) in patients with psoriasis (PsO) or psoriatic arthritis (PsA) are conflicting. Results on Trabecular Bone Score (TBS) in these patients are lacking. 3D-analysis of cortical and trabecular bone from hip DXA is a new method for non-invasive bone structure assessment, providing separate assessment of the cortical layer and trabecular macrostructure.

Objectives: Case-control study (NCT02849795)

Methods: 52 PsO and 52 PsA cases (CASPAR criteria) were each paired to a control subject matched for age, sex and body mass index (BMI). aBMD measurements at (L2-4) lumbar spine (LS), femoral neck (FN) and total hip (TH) were performed using DXA, Lunar GE. TBS was calculated from antero-posterior L2-L4 BMD image using TBS iNsite V1.8 (Med-Imaps, Pessac, France). 3D-SHAPER software (version 2.10, Galgo Medical S.L., Barcelona, Spain) was used to derive a 3D analysis from the hip DXA scans.

Results: LS and TH aBMD measurements did not differ between patients with PsO or PsA and their respective controls (Table 1). Left FN BMD was higher in patients with PsO compared to controls (p = 0.028), a difference not observed on the right FN. TBS was similar in PsA patients and their controls while decreased values were observed in PsO patients (p = 0.04). In 3D analysis, none of the parameters differed between patients with PsA and their controls. For patients with PsO, no difference was found with the controls for 3D-DXA parameters from the right FN, while total hip cortical surface BMD (sBMD) of the left FN was higher in PsO compared to their controls (p = 0.037). Similarly, cortical thickness (Cth) of the intertrochanteric and shaft regions of the left FN was also higher in PsO (p = 0.032 and p = 0.033). Finally, analysis by region (neck, intertrochanteric and shaft) showed higher values for cortical sBMD from each region of the left FN in the patients with PsO (all p < 0.05).

Conclusion: Our results showed comparable aBMD, TBS and 3D proximal femur parameters in patients with PsA and controls. This supports that PsA population is not at increased risk of osteoporosis. In patients with PsO, while LS bone microarchitecture seems impaired, FN displayed better cortical parameters than the controls. Although these results seem marginal, they support the fact that patients with PsO are not at high risk for osteoporosis and hip fracture.

Table 1. PsA: psoriatic arthritis; PsO: psoriasis; M: male; F: female; BMI: body mass index; PASI: psoriasis area severity index; CPDAI: composite psoriatic disease activity index; ESR: erythrocyte sedimentation rate; CRP: C-reactive protein; aBMD: areal bone mineral density; LS: lumbar spine; FN: femoral neck; TH: total hip; TBS: trabecular bone score; sBMD: surface bone mineral density; Cth: cortical thickness; quantitative data are mean ± standard deviation; * and ***: paired t test comparing patients with psoriatic arthritis or psoriasis alone to their respective controls; * p < 0.05; *** p < 0.001.

	PsA	PsA controls	PsO	PsO controls
N	52	52	52	52
Age (years)	52.5 ± 11.7	52.8 ± 11.1	50.5 ± 12.8	50.7 ± 12.8
Sex (M/F)	25/27	25/27	38/14	36/16
Menopausal women	18 (67%)	16 (59%)	5 (36%)	8 (50%)
BMI (Kg/m²)	27.4 ± 5.9	27.7 ± 6.4	28.4 ± 5.8	28.2 ± 6.1
PASI	7.4 ± 4.1		8.4 ± 4.9	
CPDAI	2.4 ± 3.3			
ESR (mm/h)	19.8 ± 16.6	6.9 ± 5.8	10.7 ± 8.8 ***	6.4 ± 6.4
CRP (mg/L)	10.5 ± 11.7 ***	3.9 ± 4.8	6.0 ± 9.0	4.7 ± 5.5
LS (L2-4) aBMD (g/cm²)	1.27 ± 0.49	1.20 ± 0.20	1.25 ± 0.21	1.20 ± 0.18
FN aBMD (g/cm²)				
right	0.96 ± 0.12	0.94 ± 0.14	0.98 ± 0.15	0.98 ± 0.15
left	0.96 ± 0.16		1.0 ± 0.14 *	
		0.93 ± 0.12		0.97 ± 0.13
TH aBMD (g/cm²)	1.01 ± 0.16	1.00 ± 0.15	1.11 ± 0.22	1.06 ± 0.21
L2-L4 TBS	1.32 ± 0.11	1.32 ± 0.15	1.23 ± 0.15 *	1.30 ± 0.16
Cortical sBMD (left FN) (mg/cm²)	169.7 ± 32.8	163.1 ± 29.7	182.0 ± 31.0 *	173.5 ± 30.3
Cth intertrochanteric (left FN) (mm)	1.91 ± 0.20	1.94 ± 0.18	2.03 ± 0.23 *	1.97 ± 0.19
Cth shaft (left FN) (mm)	2.98 ± 0.31	3.01 ± 0.28	3.19 ± 0.36 *	3.09 ± 0.29
Cortical sBMD (left FN) (mg/cm²)				
neck	135.27 ± 26.9	129.67 ± 21.9	140.29 ± 24.2 *	134.6 ± 22.5
intertrochanteric	162.32 ± 31.1	155.34 ± 29.3	171.39 ± 29.1 *	163.1 ± 28.9
shaft cort	269.20 ± 49.0	257.12 ± 47.3	286.2 ± 47.5 *	272.7 ± 45.2

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