treatment with ipilimumab is associated with immune-related adverse events (irAEs).¹ Since there are no biomarkers for predicting irAEs, we investigated AAB profiles as biomarkers associated with irAE in mCRPC patients treated with prostatic and ipilimumab combination therapy.

Methods Serum samples from 24 mCRPC patients treated with prostatic and ipilimumab therapy were tested for the presence of serum autoantibodies against 842 preselected antigens. Candidate antigens comprise immune-related and cancer signaling pathway proteins, autoimmune disease antigens, and tumor-associated antigens (TAA). Samples were collected prior to treatment (T0 samples), at 3 and 6 month. IrAEs included rash, elevated aminotransferases, neutropenia, diarrhoea, colitis and endocrine irAEs. Overall survival was also captured and correlated with AABs. Autoantibody levels were measured by Luminex FlexMap3D bead based multiplex protein arrays² and data were analysed by significance analysis of microarrays (SAM), Partial least squares regression (PLS) and Pearson's correlation.

Results In total, 87 AABs were found that were significantly different in patients with irAEs and those without irAEs (SAM $|d| > 2.5$; Pearson's correlation $|3| > 0.35$). PLS analysis revealed that AABs associated with irAEs were also associated with overall survival. Gene ontology analysis of pathways, molecular function and cellular localization revealed that AABs predicting irAEs target cancer, cell cycle, cell adhesion and apoptotic pathways. We also found elevated levels of AABs in patients who do not experience irAEs. Interestingly, these 40 AABs target proteins that are involved in inflammatory, adaptive and cellular immune response pathways or are autoimmune disease antigens.

Conclusions AABs that target antigens involved in cancer signalling pathways are associated with irAEs following prostatic plus checkpoint inhibitor combination therapy. In contrast, AABs targeting immune response pathways were found in patients who do not develop irAEs and may counteract the action of inflammatory molecules. Similarly, anti-cytokine AABs have been found in autoimmune diseases, were they appear to counteract the pathological effects of cytokines.³ Further studies in larger sample sets are needed to confirm these findings.

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PS2:29

THE INCIDENCE AND POSSIBLE RISK FACTORS OF LOW BONE MINERAL DENSITY IN KOREAN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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Patients with systemic lupus erythematosus (SLE) are vulnerable to bone loss and fractures, and frequencies of low bone mass reported in 4% to 74%, variably according to study design and ethnicity. The objective of this study was to evaluate the incidence of low bone mineral density (BMD) and association of clinical factors in Korean patients with SLE. In total, 138 female patients with SLE in 5 hospitals and 165

female healthy controls (HCs) were recruited. All SLE patients fulfilled the 1997 American College of Rheumatology classification criteria for SLE. The osteopenia and osteoporosis was based with the WHO criteria on dual-energy X-ray absorptiometry. The mean age of female SLE patients was 49.7 ± 11.3 years, and age, weight, and height were not different with those of HCs. Ninety-two (66.7%) patients with SLE had osteopenia, and 32 (23.2%) patients had osteoporosis, however only 25 (15.2%) HCs had osteopenia ($p < 0.001$). The SLE patients with osteopenia were older (53.8 ± 13.2 vs 48 ± 13.7 years, $p = 0.011$), lower weight (54.2 ± 9.9 vs 58.3 ± 8.4 kg, $p = 0.008$), and took higher cumulative doses of glucocorticoids ($2,332.9 \pm 4,964.2$ vs $711.4 \pm 2,185.6$ mg, $p = 0.006$) than those not. On multivariate regression analysis, age (odds ratio (OR) = 1.039, $p = 0.027$) and weight (OR = 0.957, $p = 0.038$) were associated with osteopenia. The incidence of osteopenia was significantly higher in Korean patients with SLE. In addition, age and weight were independent risk factors of osteopenia in SLE.

PS2:30

SYSTEMIC LUPUS ERYTHEMATOSUS PATIENTS WITH POSITIVES AUTOANTIBODIES WITH REMISSION OR LOW ACTIVITY EXHIBIT BOTH LOWER INTERFERON ALPHA AND INTERLEUKIN-10 LEVELS

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Purpose The aim of this study is to assess the clinical and molecular differences in SLE patients with positives autoantibodies and with low clinical activity or in clinical remission compared to the group with clinical activity.

Methods A cross-sectional, observational study of patients diagnosed of SLE according to SLICC 2012 criteria was performed. In these patients a complete blood-test was made, and clinical data by personal interview was collected. We analysed the serum concentration of IL10, BLYS and INF1A by colorimetric methods. Biostatistical analysis was performed with R 3.3.2.

Results We selected 130 SLE patients with serological manifestations (defined by RELESSER study) out of 142 SLE patients. 91 cases showed low activity or remission (SLEDAI < 6) and 39 presented moderate or high activity (SLEDAI > 6).

SLE patients with positives autoantibodies without clinical activity showed significantly lower anti-dsDNA levels ($p = 0.006$), lower complement consumption ($p = 0.003$) and lower accumulated damage evaluated by SLICC score ($p = 0.041$). No differences on time of evolution in both groups were observed.

In addition, SLE patients with positives autoantibodies without clinical activity exhibit significantly lower levels of IL10 ($p < 0.001$) and INF1A ($p = 0.019$). No differences on BLYS levels in both groups were observed.

Finally, SLE patients with positives autoantibodies with clinical activity present more mucocutaneous lesions ($p = 0.014$),

musculoskeletal manifestations ($p=0.004$), neuropsychiatric manifestations ($p=0.002$), renal manifestations ($p<0.001$) and lymphopenia ($p=0.008$) than patients with positives autoantibodies and without clinical activity.

Conclusion In our series of SLE patients with both serological manifestations and low clinical activity have lower levels of IL10 and INF1A, compared to patients with high clinical activity. This result would suggest that differences in the cytokine levels are not related to autoantibodies presence but there are other mechanisms involved in cytokine production that would also be involved in maintenance of clinical remission.

PS2:31 AGE AND AN AUTOANTIBODY ALGORITHM HELPS DISTINGUISH PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS FROM THOSE WITH SJOGREN'S SYNDROME

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Purpose Patients with Systemic Lupus Erythematosus (SLE) and Sjogren's Syndrome (SS) sometimes share common clinical features and can have similar autoantibody profiles. We evaluated a group of patients with each disease to determine which features distinguish each group.

Methods Samples ($n=1000$) were identified based on the clinical ANA results obtained by EIA (BioRad). This testing was performed on the Triturus semi-automated platform (Grifols) in accordance with all the manufacturer's instructions. Samples were selected for this study to be distributed across the

reportable range of the ANA EIA method ($n=273$ negative [<1.0 U], 225 weak positive [$1.1-2.9$], 250 positive [$3.0-5.9$], 252 strong positive [>5.9]). All samples selected for this study were subsequently analysed by multiplex assay (MIA) for specific autoantibodies. The MIA testing was performed on the BioPlex 2200 (BioRad). All samples were from adults age >18 years).

Results Out of 1000 samples there were 227 patients with connective tissue disease including 67 with SLE and 42 with SS. We compared the SLE patients with those who had SS.

The SLE patients were younger than those with SS. (Mean age 47.4 years, median 47, range 19–81 vs Mean age 56.5 years, median 59, range 19–76, P 0.001). There was no difference in sex distribution (82% female vs 86% female).

Conclusions Somewhat surprisingly, the presence of anti-DsDNA and anti-Smith antibodies was not the best way to separate the patients. The best combination of variables to distinguish SLE patients from those with SS was younger age, the presence of anti-chromatin antibodies and the absence of anti-SSA antibodies.

PS2:32 CD64, FC GAMMA R I EXPRESSION LEVELS ON MONOCYTE (MCD64) AS A POTENTIAL BIOMARKER FOR NEUROPSYCHIATRIC SYSTEMIC LUPUS ERYTHEMATOSUS (NPSLE)

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Abstract PS2:31 Table 1

Antibody	SLE (n=67) % positive	SS (n=42) % positive	P-Value	Age adjusted P-value
chromatin	52%	10%	<0.001	<0.001
DsDNA	53%	2%	<0.001	0.98
Ribosomal P	13%	2%	0.052	0.27
RNP	27%	2%	0.004	0.029
Smith	21%	0%	0.002	0.97
SmRNP	31%	2%	<0.001	0.009
SSA	49%	93%	<0.001	<0.001
SSB	16%	52%	<0.001	<0.001

Multivariable model to distinguish SLE from SS (reference)

Characteristic	Odds ratio (95% CI)	p-value
Age	0.94 (0.90, 0.98)	0.002
Chr	3.24 (1.67, 6.29)	<0.001
SSa	0.23 (0.11, 0.48)	<0.001

c-statistic: 0.88.

Interpretation: Patients with SLE are younger than patients with SS. Patients with SLE are 3 times more likely to have Chr and 5 times less likely to have SSa compared to patients with SS.