INTRODUCTION & OBJECTIVES: The multiparametric-MRI (mp-MRI) becomes increasingly important for the diagnosis of prostate cancer (PCa). The European Society of Urogenital Radiology (ESUR) recently published a Prostate Imaging Reporting and Data System (PI-RADS) for scoring of lesions. This study evaluates the correlation of the PI-RADS score with the Gleason score sum.

MATERIAL & METHODS: 202 prostate cancer lesions histological verified by MRI-guided in-bore biopsy in 108 patients were evaluated in this study. Inclusion criteria were elevated prostate specific antigen (PSA) levels (>4 ng/ml) and no history of prior prostate cancer. All patients underwent diagnostic mp-MRI (T2-weighted images, diffusion-weighted imaging, and dynamic contrast-enhanced imaging). Suspicious lesions were defined along the PI-RADS score. Statistical analysis was performed including the correlation coefficient (Spearman) and the Mann-Whitney U test.

RESULTS: The mean PI-RADS sum score in lesions with a verified Gleason grade of 3+3=6 was 11 +/- 1.8 (n=50), in lesions with a Gleason grade of 3+4=7 it was 12 +/- 2.3 (n=88), in lesions with a Gleason grade of 4+3=7 it was 13 +/- 1.7 (n=39), lesions with a Gleason grade of 4+4=8 had a mean PI-RADS score of 13 +/-1.4 (n= 14), and with a Gleason grade of 4+5=9 and 5+4=9 a score of 14 +/- 1.4 (n=11). A significant difference of the PI-RADS score was shown between low-risk (Gleason 6 and Gleason 7a) and intermediate plus high risk prostate cancer (Gleason 7b and higher) (p<0.001). There is a positive correlation between PIRADS sum score and Gleason score (cc = 0.439).

CONCLUSIONS: The PI-RADS sum score and the Gleason grade show a moderate correlation for our patient collective. Low-risk prostate cancers have a significant lower PI-RADS sum score than intermediate or high risk tumors.