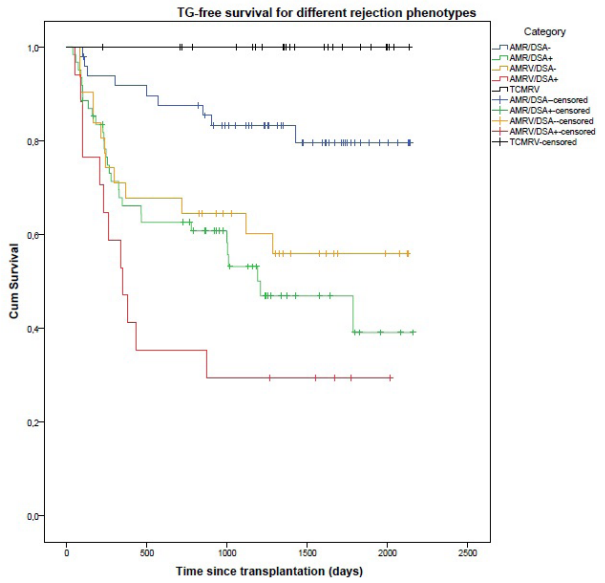

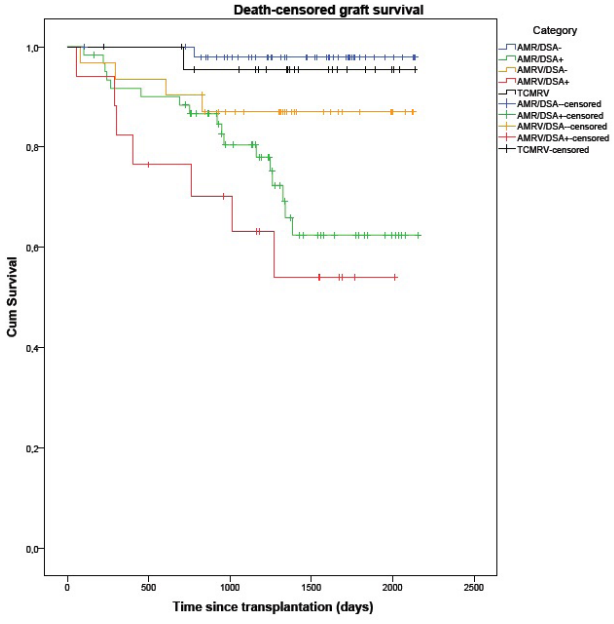

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Abstract# 21

Long Term Graft Outcome after Subclinical Banff Borderline Changes Suspicious for Acute T Cell-Mediated Rejection

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Purpose: Long term data after Banff borderline changes suspicious for acute T cell-mediated rejection (BDR lesion) are scarce, and hence, there is little evidence to guide optimal treatment after the occurrence of BDR lesion. This study aimed to assess the long term impact of early subclinical BDR lesions on long term renal graft function.
Methods: We retrospectively evaluated the long term results of 614 patients who showed no acute rejection (NAR) or BDR lesion on early protocol biopsies (<3 week post-transplant) after renal transplantation between July 2008 and Dec 2015. Long term graft function, including estimated glomerular filtration rate (eGFR) change, subsequent rejection, development of de novo DSA, and graft survival, were compared among the three patient groups (NAR group; BDR-Tx group, BDR lesion with treatment; BDR-NTx, BDR lesion without treatment) according to the biopsy results and treatment provided.
Results: The study included 429 patients with NAR (NAR group) and 285 patients with BDR during the early protocol biopsy. Among the 385 patients with subclinical BDR lesions, patients treated (BDR-Tx, n=76) had lower eGFR at biopsy (median 74.2 mL/min/1.73 m^2 vs. 79.8 mL/min/1.73 m^2, p=0.017), higher t-score (>t1, 12.8% vs 2.6%, p=0.014), and more IFTA (13.8% vs. 2.6%, p=0.020) than untreated patients (BDR-NTx, n=109). When eGFR change over 60 months of the three groups were compared using logistic generalized estimate equation, although eGFR differed between the three groups (χ2=9.3, df=2, p=0.009), and showed a significant difference over time (χ2=92.9, df=5, p<0.001), there was no between-group difference in the change of eGFR over time (χ2=12.3, df=10, p=0.26). BDR-NTx and BDR-Tx had a higher risk of developing future T cell-mediated rejection, according to COX univariate analysis (p=0.003). Other factors associated with risk of subsequent T cell-mediated rejection in COX univariate analysis were donor age, recipient age, recipient sex, eGFR at biopsy, HLA mismatch number, peak pretransplant PRA, and ptc at protocol biopsy. COX multivariate analysis including the relevant showed significantly increase in the risk of acute T cell-mediated rejection in BDR-NTx group (HR 1.63, 95%CI 1.13-2.35, p=0.01), but not in BDR-Tx group (HR 1.28, 95% CI 0.93-1.48, p=0.131) compared to NAR group.). There was no significant difference in the occurrence of future antibody-mediated rejection or graft failure between the three groups.
Conclusions: While early subclinical BDR lesion may be associated with persistence or development of further T-cell mediated pathology when not treated, neither BDR lesion or its treatment were related to long term graft function decline or failure.
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Abstract# 22

The Banff Classification of Antibody-Mediated Rejection in Kidney Allografts: Comparison of Predictive Performance for Allograft Failure in Previous and Current Editions

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Purpose: Since its introduction in 2001, the Banff classification for antibody-mediated rejection (ABMR) has undergone significant changes, mainly by inclusion of C4d-negative ABMR in 2013 and removal of suspicious ABMR (sABMR) with the use of C4d as surrogate for DSA in 2017. It is unclear to what extent these changes have altered the prognostic value of the Banff classification.
Methods: In a single-center cohort study of 1000 single kidney transplantations between 2004 and 2013, all 3470 protocol and 847 indication biopsies were classified according to the 2001, 2013 and 2017 Banff classification. Survival analysis was based on the most severe rejection category occurring within the first year after transplantation.
Results: Of the 4317 biopsies included, 499 were defined as ABMR or sABMR by at least one Banff edition. Comparing the 2001 and 2013 classifications, sABMR and ABMR diagnoses increased from 242 to 298 biopsies, and from 74 to 201 biopsies, respectively (Figure 1). The hazard ratio for allograft failure (95% CI) after ABMR within the first year increased from 3.79 (1.96-7.33) to 4.25 (2.60-6.96). In the Banff 2017 update, removal of the suspicious category caused reclassification of 254/298 sABMR biopsies to No ABMR, and 44/298 to ABMR. However, overall HR after ABMR decreased to 3.47 (2.23-5.41), since reclassified sABMR cases associated with better survival than biopsies considered as ABMR in previous Banff editions. Conversely, sABMR reclassified to No ABMR conferred worse outcome than biopsies previously considered as absence of ABMR.
Conclusions: Inclusion of C4d-negative ABMR in the 2013 Banff revision importantly increased the numbers of cases with ABMR and augmented the predictive performance for allograft outcome. In contrast, removal of the suspicious category and introduction of DSA-negative ABMR in 2017 decreased the prognostic value of the Banff classification. These data demonstrate the clinical relevance of an intermediate ABMR category, of which the reintroduction should be considered in future updates.