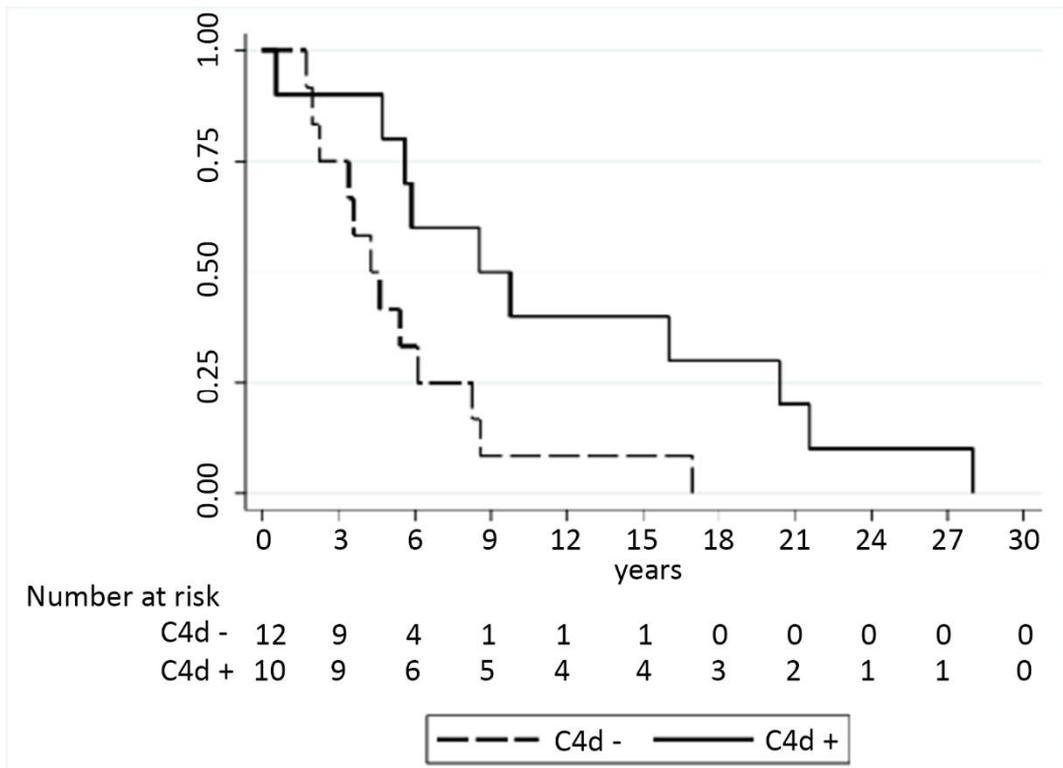
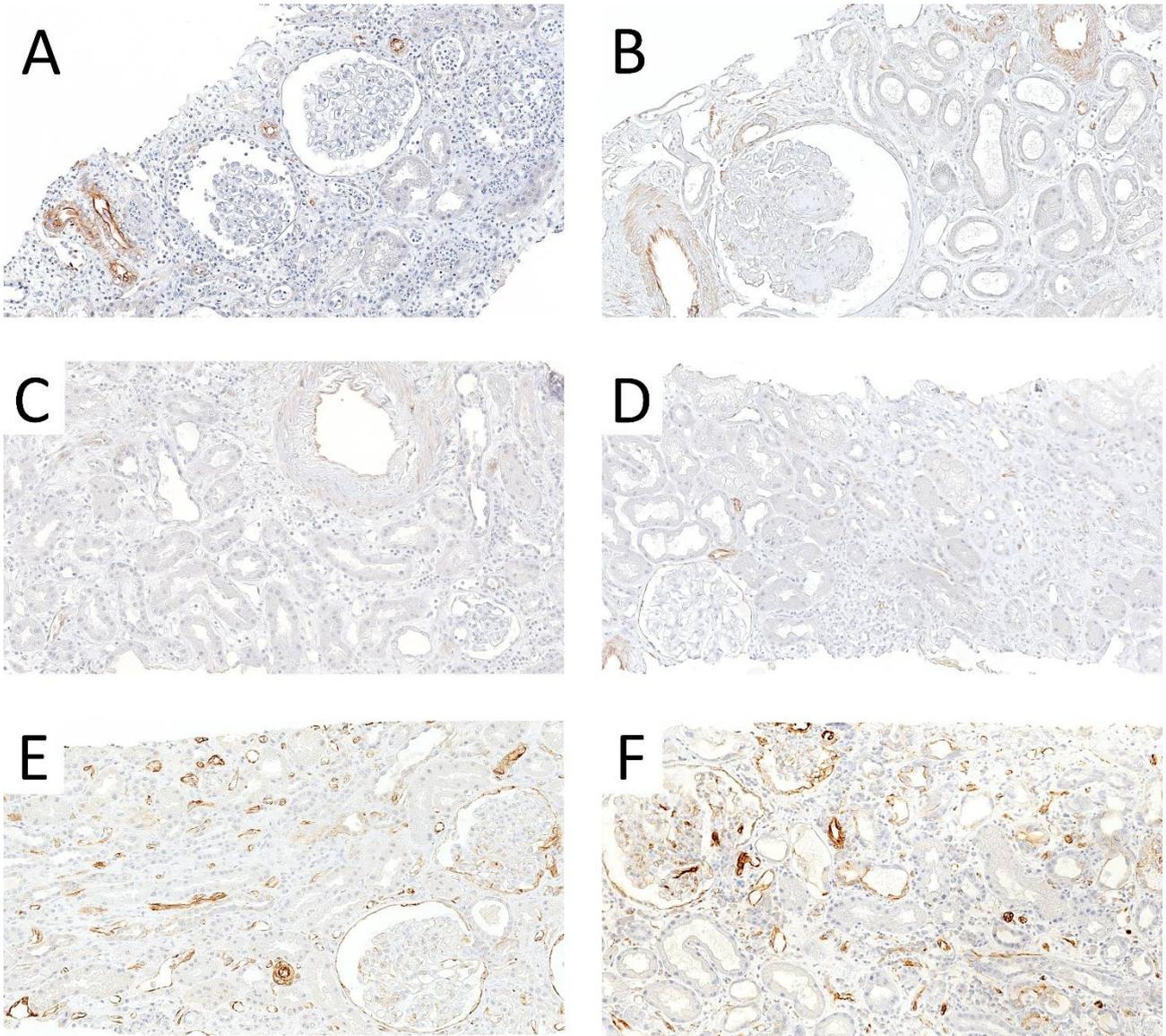


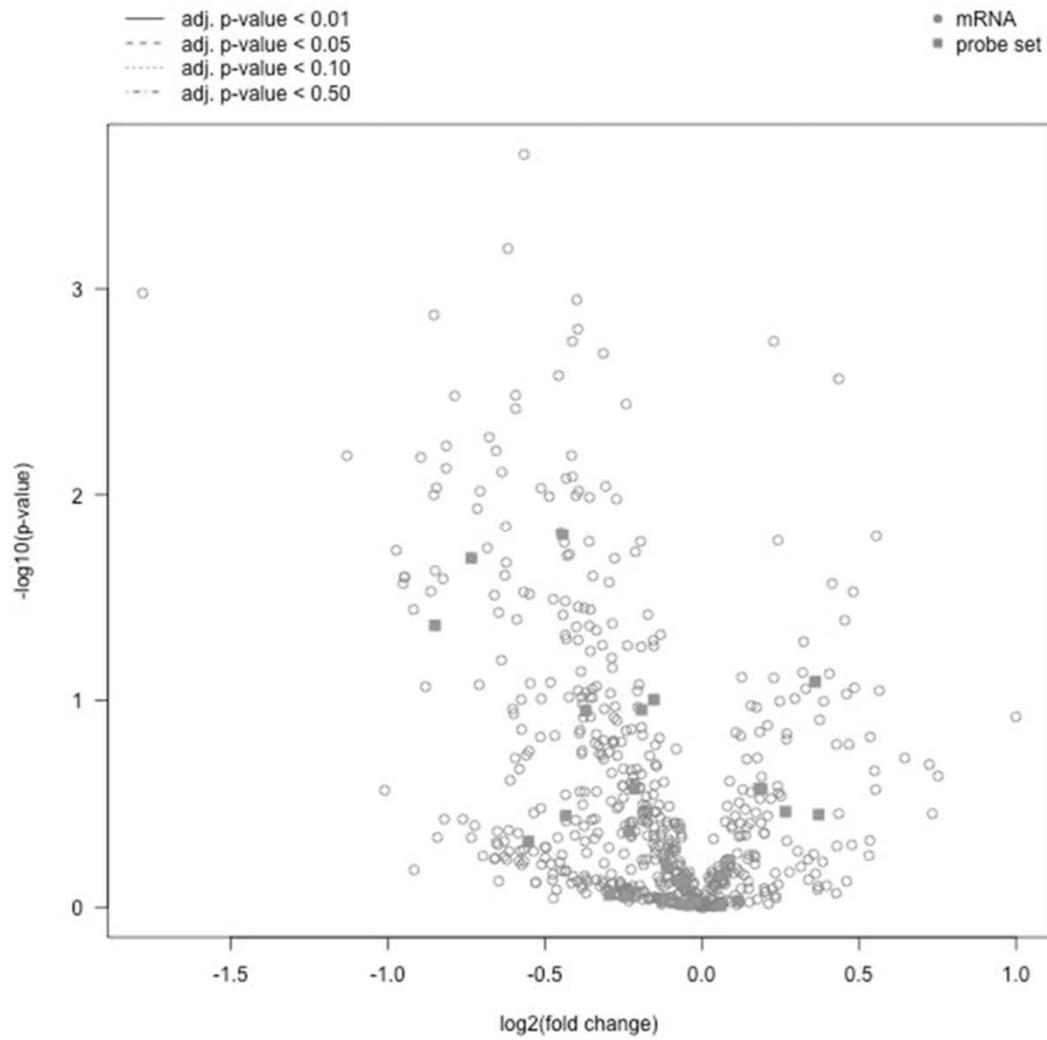
**Figure S1 Follow-up time analysis.** The Kaplan-Meier method was applied on the study's population, considering c-ABMR and the control group.



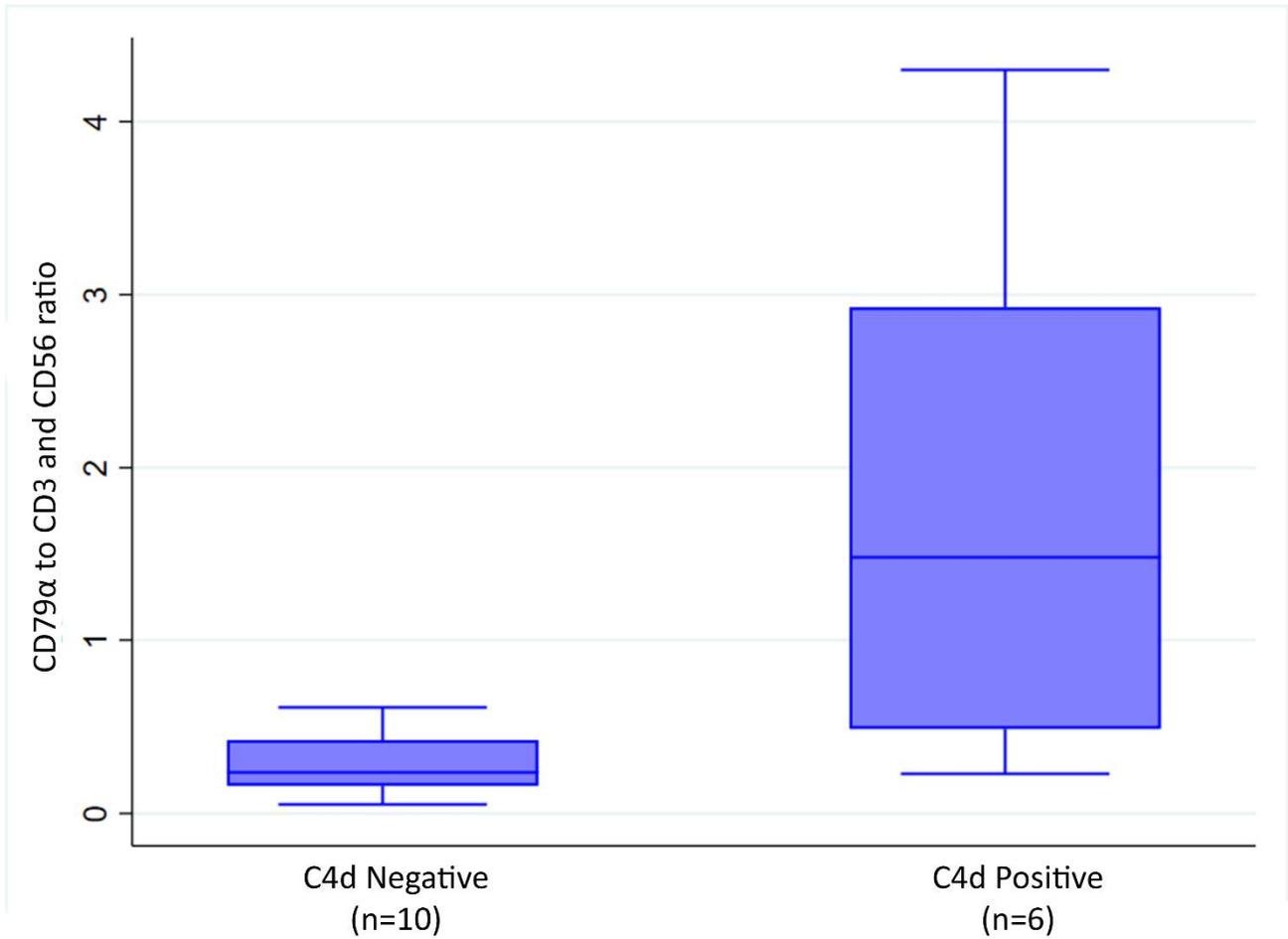
**Figure S2 Follow-up time analysis.** The Kaplan-Meier method was performed to represent the median rejection time comparing the C4d positive (10 cases) and the C4d negative (12 cases) group ( $p=0.023$ ).



**Figure S3 Cav-1 immunohistochemical expression in additional transplant kidney diseases.** In diseases with no histopathological features of an antibody mediated injury, Cav-1 resulted completely negative (Grade 0) in glomerular and peritubular capillaries (A: acute pyelonephritis) or with a minimal expression (Grade 1) in peritubular capillaries only (B: diabetic nephropathy plus recurrent 2,8 DHA nephropathy; C: acute tubular necrosis; D: pure TCMR). Conversely, samples that presented an antibody mediated injury were Cav-1 focal or diffuse positive (Grade 2-3) (E: active ABMR; F: c-ABMR with superimposed IgA nephropathy). Original magnification 200x.



**Figure S4 Gene expression profile.** Volcano plot representing the gene expression profile of C4d positive compared to C4d negative cases. In this plot, no horizontal lines P-value threshold are represented since no genes presented a statistical relevant fold change (all genes' expression presented a P-value >0.50).



**Figure S5** Box plot of B cell to T and NK cell ratio in C4d-negative versus C4d-positive c-ABMR samples based on IHC evaluation.

	Cav-1 expression score							
	Peritubular capillaries				Glomerular capillaries			
	Grade 0	Grade 1	Grade 2	Grade 3	Grade 0	Grade 1	Grade 2	Grade 3
Arteriosclerosis-related vascular injury (n=2)	2	0	0	0	2	0	0	0
Interstitial fibrosis (n=1)	1	0	0	0	1	0	0	0
Post-transplant membranous glomerulonephritis (n=2)	2	0	0	0	2	0	0	0
Acute pyelonephritis (n=1)	1	0	0	0	1	0	0	0
Acute tubular necrosis (n=1)	0	1	0	0	1	0	0	0
Diabetic nephropathy plus recurrent 2,8 DHA nephropathy (n=1)	0	1	0	0	1	0	0	0
T-Cell Mediated Rejection (TCMR) (n=5)	1	4	0	0	5	0	0	0
Active antibody-mediated rejection (n=10)	0	0	0	10	1	3	4	2
Mixed c-ABMR/TCMR (n=1)	0	0	0	1	0	0	0	1
Mixed c-ABMR/IgA nephropathy (n=4)	0	0	0	4	0	0	4	0

Table S1 Details of Cav-1 IHC expression in the exploratory series of additional kidney pathological conditions.

**Methods M1** All samples were fixed with alcohol-formalin-acetic acid (AFA) and paraffin-embedded (PE). Two- $\mu\text{m}$  sections were then cut, mounted onto adhesive slides, and stained with hematoxylin-eosin, periodic acid-Schiff, Masson's trichrome, phosphotungstic acid hematoxylin, acid fuchsin orange G, and Jones' methenamine silver stain. In all cases, deposition of C4d was determined by IHC (clone SP91; Ventana Medical Systems, Arizona, USA).

In some cases, tissue specimens were also routinely analyzed with direct immunofluorescence (DIF) for diagnostic purposes. For DIF, fresh-frozen tissue samples were cut at three  $\mu\text{m}$ -thick in a cryostat, fixed for 10 minutes in cold acetone, and then stained with a panel of FITC-conjugated antibodies (IgA, IgM, IgG, C3, C4, C1q, and fibrinogen; New Scientific Company, Lombardy, Italy).

All immunohistochemical stainings were performed with the automated immunostainer BenchMark XT AutoStainer® (Ventana Medical Systems, Arizona, USA).

All the procedures mentioned in the manuscript were performed according to manufacturer's protocols and instructions.