

Supplementary Appendix.

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Figure S1. Flow chart diagram.

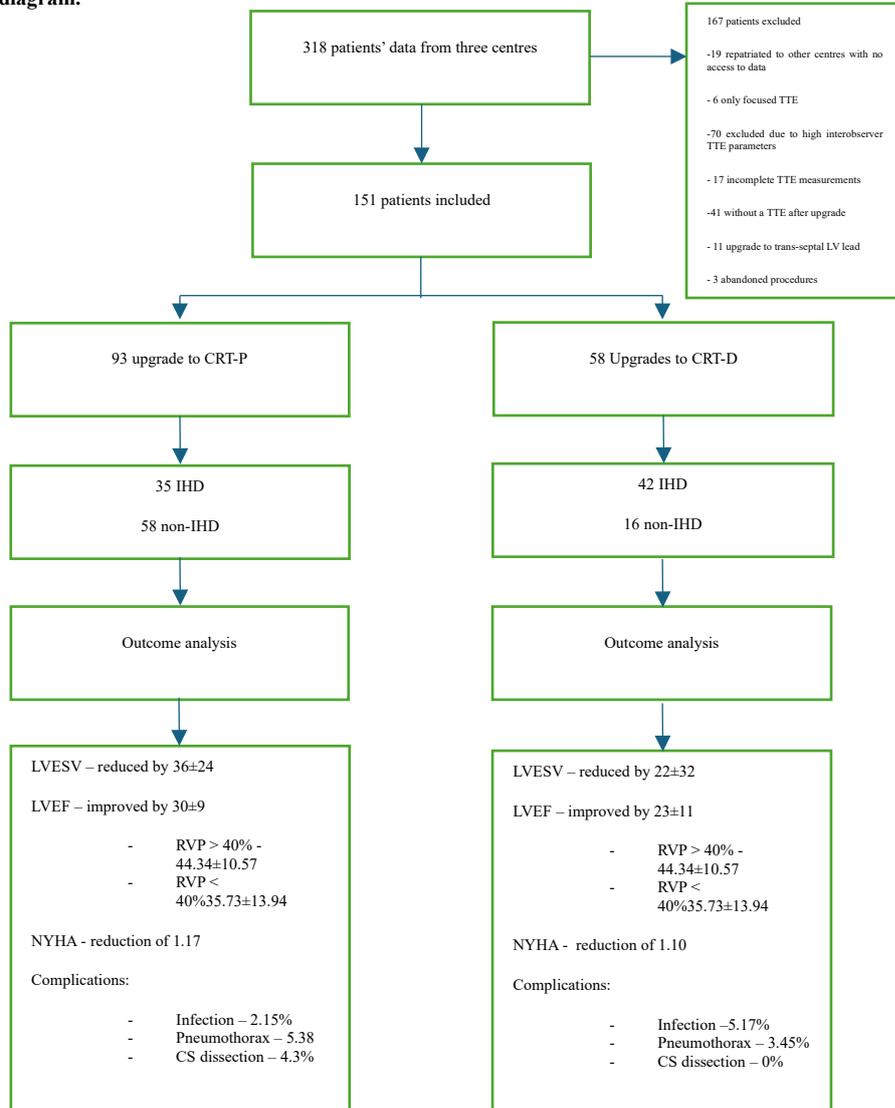


Table S1: Baseline and post upgrade characteristics:

Variable	Observations	Obs. without missing data	Minimum	Maximum	Mean	Std. deviation	Variable/Test	Mann-Whitney
Pre-upgrade QRSD ICD	58	58	123	221	170.52	25.46	Pre-upgrade QRSD	0.0073
Pre-upgrade QRSD PPM Upgrade	93	93	137	230	181.56	21.60		
Post upgrade QRSD ICD	58	58	90	144	117.69	12.19	Post upgrade QRSD	0.3244
Post upgrade QRSD PPM Upgrade	93	93	35	168	114.88	15.19		
QRSD decrease ICD	58	58	-13	108	52.83	25.46	QRSD reduction	0.0029
QRSD decrease PPM Upgrade	93	93	15	165	66.68	25.48		
Pre upgrade LVESV (biplane) ICD	58	58	74	336	151.66	47.03	Pre upgrade LVESV (biplane)	< 0.0001
Pre upgrade LVESV (biplane) PPM Upgrade	93	93	45	223	121.38	33.56		
Post upgrade LVESV (Biplane) ICD	58	58	49	267	128.98	58.93	Post upgrade LVESV (Biplane)	< 0.0001
Post upgrade LVESV (Biplane) PPM Upgrade	93	93	35	193	84.77	32.44		
LVESV decrease ICD	58	58	-70	125	22.67	32.33	LVESV reduction	0.0192
LVESV decrease PPM Upgrade	93	93	-11	118	36.60	24.69		
Pre upgrade LVIDd (M Mode) ICD	58	58	4.4	8.6	6.32	0.89	Pre upgrade LVIDd (M Mode)	< 0.0001
Pre upgrade LVIDd (M Mode) PPM Upgrade	93	93	4.3	7.7	5.63	0.72		
Post upgrade LVIDd (M Mode) ICD	58	58	3.9	8.7	5.94	1.08	Post upgrade LVIDd (M Mode)	< 0.0001
Post upgrade LVIDd (M Mode) PPM Upgrade	93	93	3	7.2	5.10	0.80		
LVIDd decrease ICD	58	58	-1.5	1.6	0.38	0.69	LVIDd reduction	0.1229
LVIDd decrease PPM Upgrade	93	93	-0.6	2.05	0.53	0.47		
Pre upgrade EF (simpson biplane) ICD	58	58	10	55	23.88	11.33	Pre upgrade EF (simpson biplane)	< 0.0001
Pre upgrade EF (simpson biplane) PPM Upgrade	93	93	9	55	30.52	9.70		
Post upgrade EF (Simpson biplane) ICD	58	58	10	62	33.90	13.56	Post upgrade EF (Simpson biplane)	< 0.0001
Post upgrade EF (Simpson biplane) PPM Upgrade	93	93	10	65	43.32	11.29		
EF increase ICD	58	58	-18	45	10.02	14.85	EF increase	0.0322
EF increase PPM Upgrade	93	93	-10	40	12.81	9.53		
Pre upgrade NYHA Class ICD	58	58	2	4	3.10	0.67	Pre upgrade NYHA Class	0.0347
Pre upgrade NYHA Class PPM Upgrade	93	93	1	4	2.88	0.55		
0-18 Month post upgrade NYHA class ICD	58	58	1	3	2.00	0.70	0-18 Month post upgrade NYHA class	0.0134
0-18 Month post upgrade NYHA class PPM Upgrade	93	93	1	3	1.71	0.68		
NYHA decrease ICD	58	58	0	3	1.10	1.00	NYHA reduction	0.5373
NYHA decrease PPM Upgrade	93	93	-1	3	1.17	0.87		
Pre upgrade LEDV (Biplane) ICD	58	58	123	400	219.91	69.05	Pre upgrade LEDV (Biplane)	< 0.0001
Pre upgrade LEDV (Biplane) PPM Upgrade	93	93	81	349	170.18	50.54		
Post upgrade LEDV (Biplane) ICD	58	58	66	421	187.22	81.37	Post upgrade LEDV (Biplane)	< 0.0001
Post upgrade LEDV (Biplane) PPM Upgrade	93	93	62	275	128.95	46.86		
LEDV decrease ICD	58	58	-117	141	32.70	56.56	LEDV reduction	0.5935
LEDV decrease PPM Upgrade	93	93	-12	151	41.24	29.74		

Components of the study outcome:

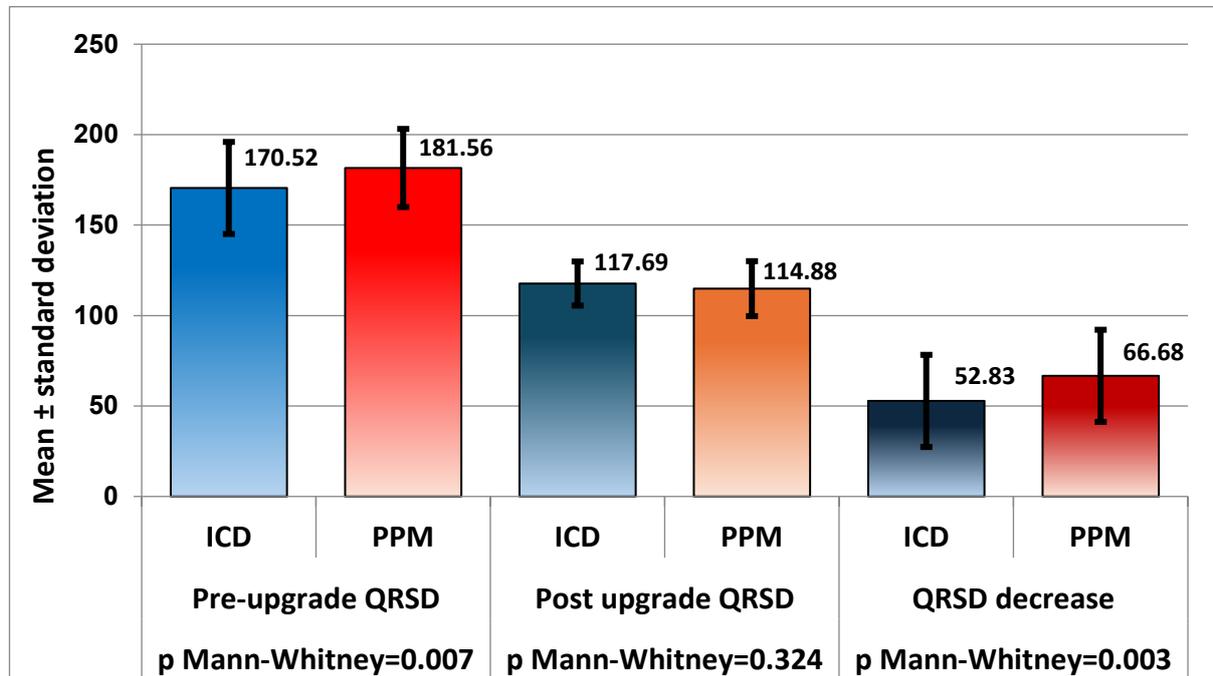


Figure S2. Patients in the PPM group had significantly greater QRS duration compared to ICD group pre-upgrade to CRT (p Mann Whitney=0.007 < 0,05). Post upgrade reduction in QRS duration was statistically significant within the PPM group (p=0.003<0.05).

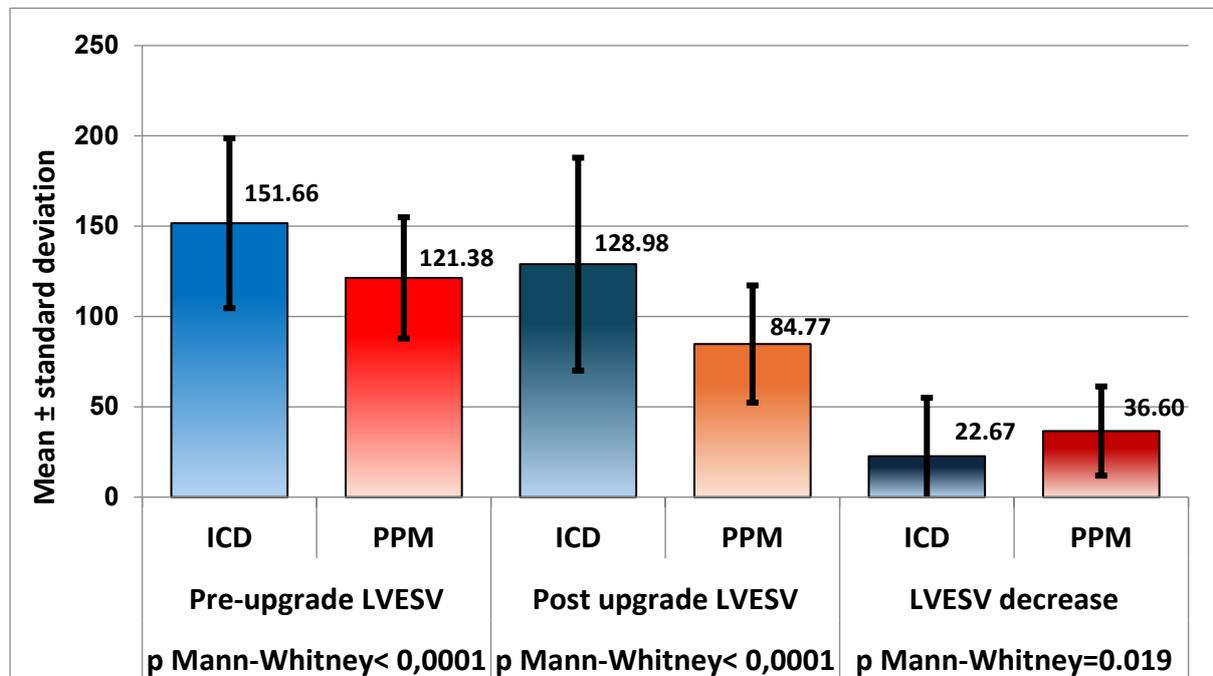


Figure S3: Comparing LVESV, there were highly significant differences between the pre- and post-upgrade volumes measured in the ICD and PPM patients, in both situations ICD patients having greater values. Comparing the reduction in LVESV, we noticed a significant reduction of LVESV within the PPM group compared to the ICD group(p Mann-Whitney=0.019<0.05).

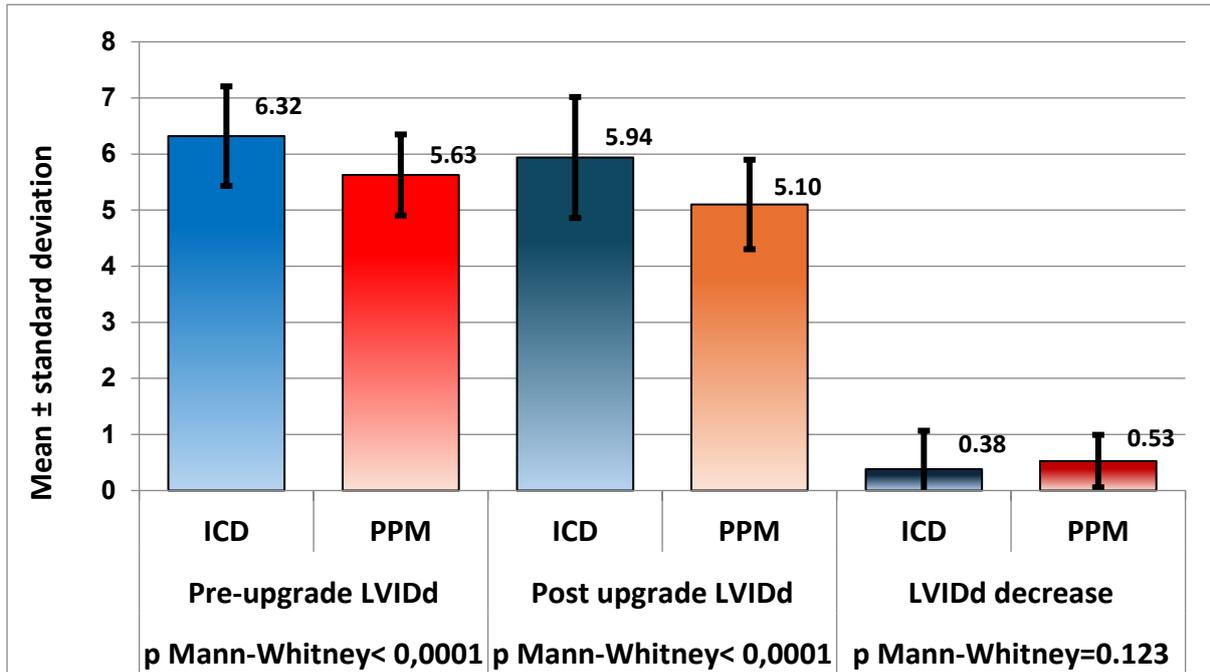


Figure S4: The ICD group had a greater LVIDD both, pre-and post-upgrade however, the post-upgrade reduction in LVIDD was not statistically significant comparing the two groups ($p=0.123>0.05$).

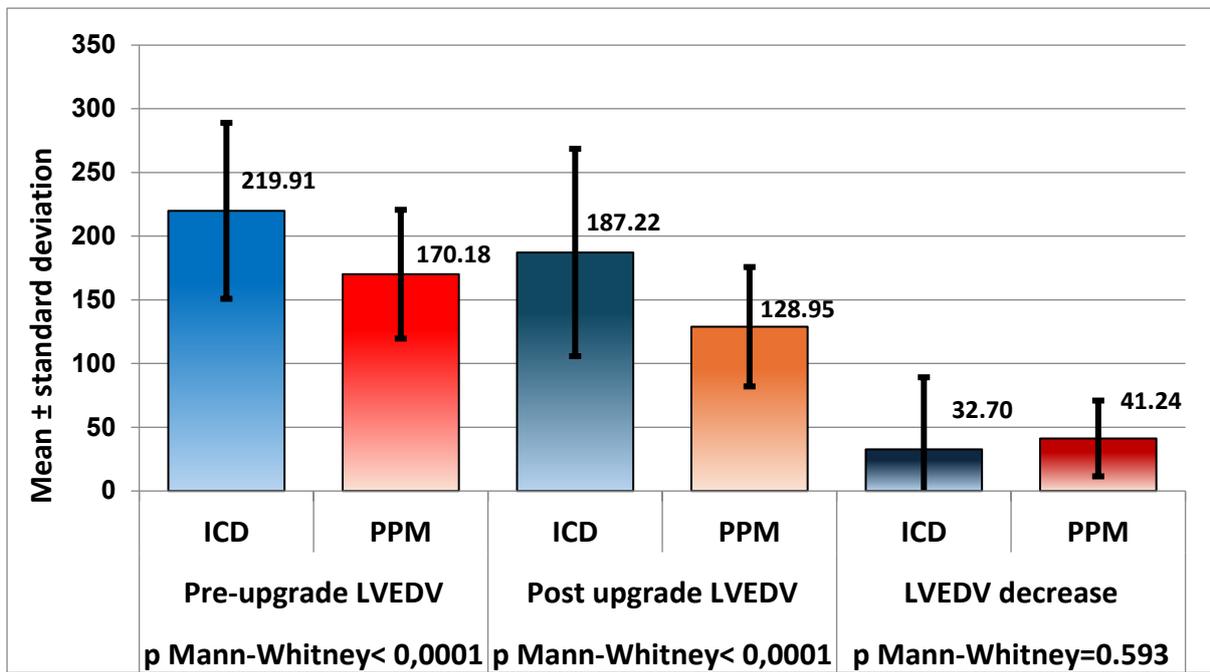


Figure S5: LVEDV was significantly greater in patients with ICD, both pre- and post-upgrade ($p<0.001$). Post upgrade, the PPM group had a greater reduction, however statistically not significant when compared to the ICD group (p Mann-Whitney $p=0.593$).

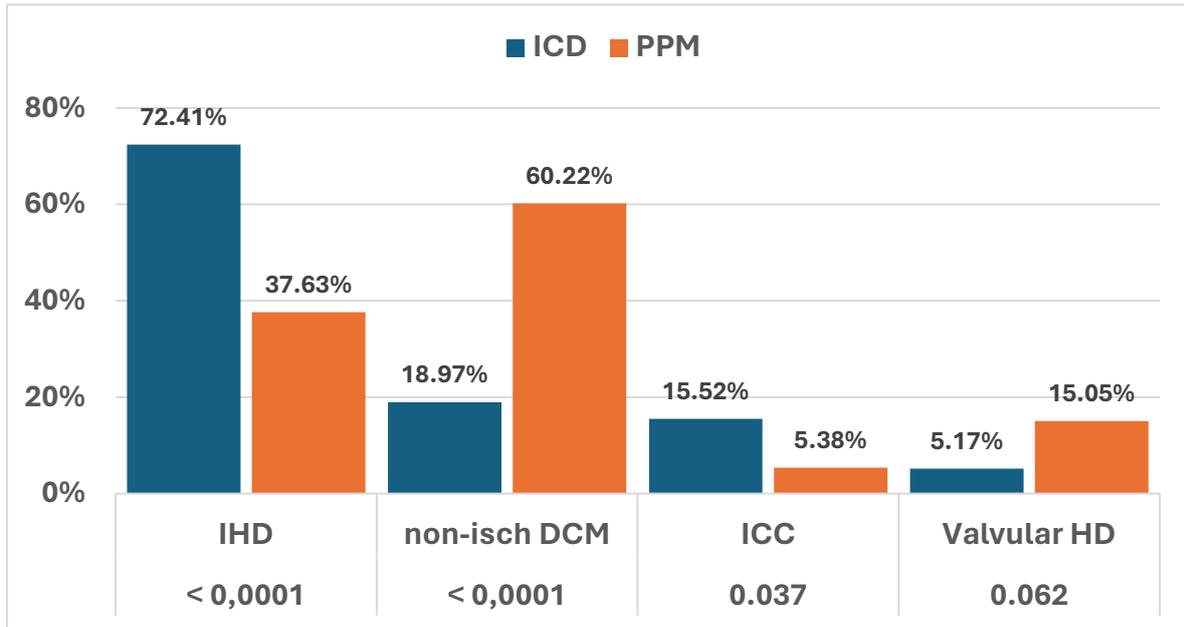


Figure S6: High prevalence of IHD in the ICD group (p Chi square<0.001). High prevalence of non-ischemic DCM in PPM patients.

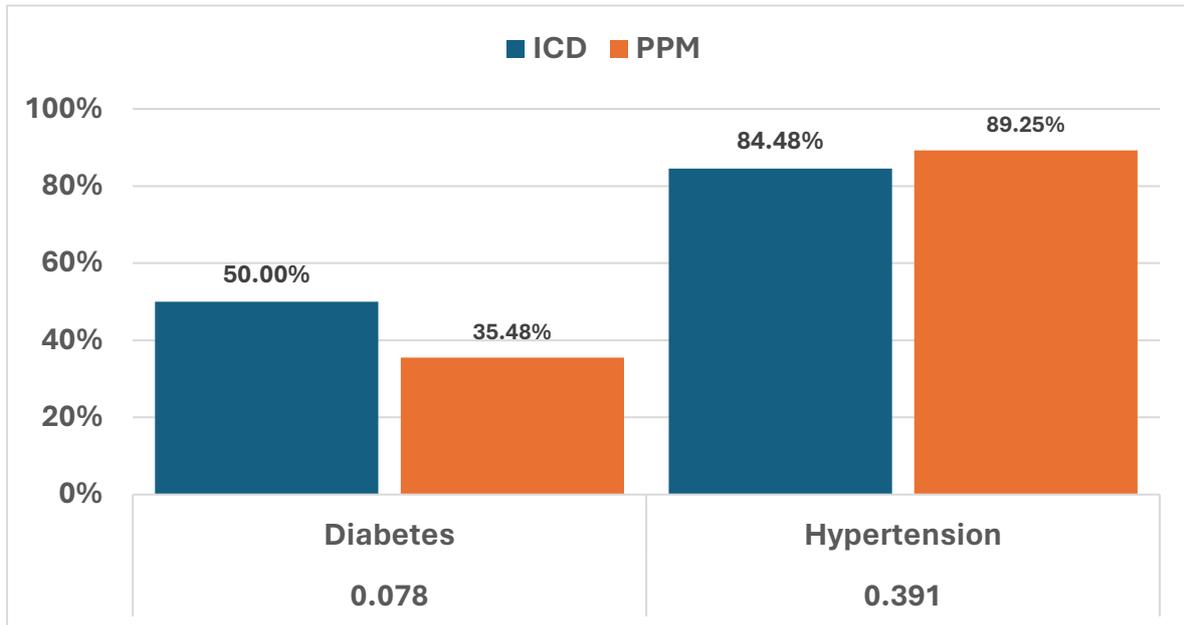


Figure S7: Patients within the ICD group had an increased prevalence of diabetes compared to the PPM group; however, the difference was not statistically significant (p Chi square=0.078>0.05). Hypertension prevalence rates were similar in the two subgroups.

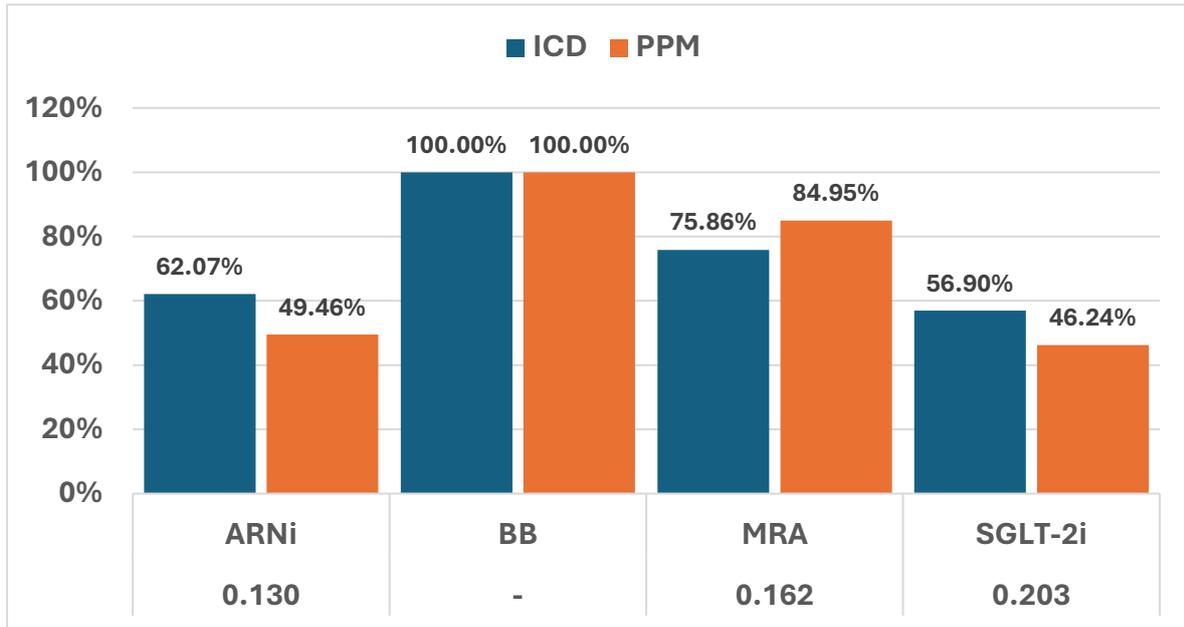


Figure S8: There were no significant differences in the use of the four pillars of heart failure treatment* between the ICD and PPM groups.

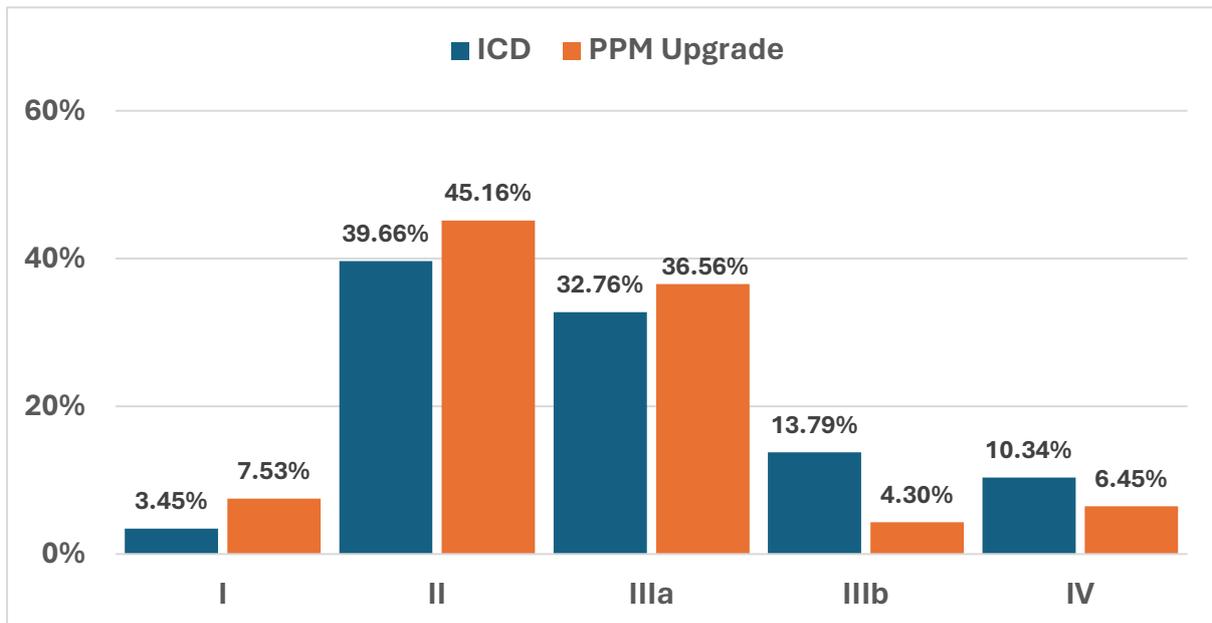


Figure S9: The prevalence of chronic kidney disease within the two subgroups were non-significant (p Chi square=0.189>0.05).