The difference of recurrence modality in the blanking period and the quest for the best period of blanking period between cryoballoon and radiofrequency catheter ablation for atrial fibrillation.

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**Introduction**: Recurrences within first 3 months after atrial fibrillation (AF) ablation are common and recurrences during this period is not a true recurrence (blanking period). but their clinical significance and best period is still controversial and limited data exist difference between radiofrequency catheter ablation (RFA) and cryoballoon ablation (CBA). The purpose of this study was to investigate the best period for blanking period (BP), and the incidence and characteristics of patients with AF recurrences within BP, comparison of RFA and CBA.

**Methods**: 449 patients with paroxysmal AF after RFA (RF group) and 855 patients with paroxysmal AF after CBA (CB group) in January 2013 to October 2017 and more than one year follow up were enrolled.

**Result**: There was no difference in clinical characteristics between RF group and CB group. Recurrences within 3months in RF group tended to be lower than in CB group (69/449 patients (15%) vs 159/855 patients (19%), p=0.14). And recurrences within 3months in RF group indicated larger recurrences after 3months than in CB group (47/69 patients (68%) vs 62/159 patients (39%), p<0.001). Therefore, patients in RF group, if the recurrence time is late period within 3months, increases the possibility of true recurrence (within 7days: 14/30 patients (47%), From 7days to 3months: 33/39 patients (85%), p<0.001). And, especially that the recurrence from 1month to 3months are always recurrence after 3months (within 1month: 29/50 patients (58%), From 1month to 3months: 18/19 patients (95%), p<0.001). But patients in CB group, the rate of true recurrence does not change at any time of recurrence within 3 months. (within 7days 36/95 patients (38%), From 7days to 3months 26/64 patients (41%), P=0.73, within 1month 53/141 patients (38%), From 1month to 3months 9/18 patients (50%), p=0.51)

**Conclusion**: Recurrences within 3months are associated with recurrences after 3months. But recurrence within 3months means difference between after RFA and after CBA. Recurrences within 3months after CBA develop recurrences after 3months less than after RFA. In addition, patients in RF group, 1month is best period for BP. The other hand, patients in CBA group, 3month is best period for BP.