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### Clinical implications of longer procedure time during chronic total occlusion intervention

**Background** Although procedure time of chronic total occlusion (CTO) coronary lesion is usually longer than non-CTO lesion, clinical implication for the longer procedure time is not unclear. **Methods** We enrolled 470 patients who underwent CTO intervention, and divided into three tertiles (shorter-tertile group: 13~60 minutes; mid-tertile group: 61~92 minutes; longer-tertile group: 93~322 minutes) based on the procedure time. The primary end point is acute periprocedural myocardial infarction (PMI), defined as an increase in creatine kinase-MB >3x the upper limit of normal after intervention, and long-term major adverse cardiac events (MACE). **Results** Longer-tertile procedure time group had a higher incidence of Japan-CTO score >3, effective radiation >100mSv, the use of intravascular ultrasound, previous coronary intervention. Longer-tertile procedure time group was likely to occur PMI compared with other two groups (11.8% vs. 8.0% vs. 2.3%,  $p=0.004$ ). Significant independent risk factor for PMI was procedure time, followed as mid-procedure time (odds ratio [OR]=3.79, 95% confidence interval [CI]=1.14-12.59;  $p=0.030$ ), longer-procedure time (OR=5.21, 95%CI=1.67-16.26,  $p=0.004$ ) compared with shorter-tertile procedure time group. During a mean follow-up of 24.5 months, long-term MACE was not significantly different across three procedure time groups. However, the PMI group had a significantly higher MACE rate than the non-PMI group (19.6% vs. 6.2%,  $p=0.036$  by log-rank test). **Conclusion** Longer procedure time were strongly related to PMI after CTO intervention, and PMI was significantly associated with worse clinical outcomes.