# Supplement 1. The rationale for conducting the meta-analysis

AMI patients with bundle-branch block (BBB) have worse prognoses than patients without in most previous studies. Yet investigators of these studies did not compare the effects of identified new-onset RBBB with previous RBBB (Bhalli et al., 2009; Widimsky et al., 2012). A recent systematic review (Hazem et al., 2014) showed that patients with RBBB and AMI were at more than 2-fold higher risk of all-cause mortality in 30-day follow-up compared to those without BBB. Furthermore, for patients with myocardial infarction, several other studies have reported positive associations between RBBB and all-cause mortality (Kleemann et al., 2008; Widimsky et al., 2012; Wong et al., 2006), whereas others have reported no association (Archbold et al., 1998; Juarez-Herrera & Jerjes-Sanchez, 2013).

Considering the anatomy and vascular supply of the conduction system (Mullins & Atkins, 1976; Roos & Dunning, 1978), RBBB is usually the manifestation of large infarctions that are often accompanied by heart failure, complete AV block, arrhythmias, and a high mortality (Melgarejo-Moreno et al., 1997; Klein et al., 1984). The classification of RBBB according to onset time, duration, and association with fascicular block is of clinical importance (Hindman et al., 1978; Lie et al., 1974; Ricou et al., 1991). Curiously, numbers of studies claimed that, thrombolytic treatment limits infarct size (Kloner et al., 1983; Braunwald, 1987), improves ventricular morphology and function (White et al., 1987), and decreases mortality (Yusuf et al., 1990; Grines & DeMaria, 1990; Nicod et al., 1993; 1994)**.** Moreover, some studies connected the reversibility of conduction disturbances with coronary reperfusion (Roth et al., 1993; Wiseman et al., 1989), which suggests that reperfusion therapy may prevent the appearance or limit the duration of bundle-branch blocks. Thus, it is probable that the current reperfusion therapy has changed the overall incidence and significance of RBBB in AMI. Therefore it is reasonable to reanalyze and re-realize its meaning in the reperfusion therapy era. Moreover, the new ESC guideline (Ibanez et al., 2017) recommends a primary PCI strategy should be considered when persistent ischemic symptoms occur in patients with ST-segment elevation AMI and RBBB. But, the evidence is not sufficient. The cited literature (Widimsky et al., 2012) was not clearly distinguished new-onset and unknown RBBB.

# Supplement 2. The contribution that the meta-analysis makes to knowledge

This study focuses on short-term mortality, long-term mortality and other major cardiovascular adverse events in AMI patients with new-onset RBBB. The effects of permanent and transient new-onset RBBB was also assessed. To our knowledge, this is the first meta-analysis of observational studies on the prognostic value of new-onset RBBB in the context of AMI.

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