

## Critical Appraisal of Macitentan in Pulmonary Arterial Hypertension

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### Abstract

**Introduction:** Macitentan is a novel dual endothelin-receptor antagonist with sustained receptor binding in clinical development for pulmonary arterial hypertension (PAH). Macitentan has been accepted in US and Europe for PAH treatment. However there isn't any data the use of macitentan in Indonesia yet.

**Aim:** This review aimed to appraise the clinical evidences of macitentan for the treatment of pulmonary arterial hypertension.

**Method:** We searched in major medical databases such as PubMed, MEDLINE, Clinical Key, Cochrane Library, and EMBASE. We limit our searches only for articles that can be obtained in full text, published in 10 years, and published in English. We used Jadad scale to measure the quality of the evidences.

**Results:** We find 3 trials that assessed efficacy Macitentan : SERAPHIN, MUSIC, and SERAPHIN Open Label. But only 1 trials with design randomized and double blind fashion that meet our criteria. The trial is SERAPHIN study. The SERAPHIN study compared macitentan 3mg and macitentan 10mg with placebo. The study have good quality in methodology (Jadad scale > 3). The result of SERAPHIN study showed the benefit of macitentan in reducing morbidity compared with placebo with relative risk reduction range from 34% to 41%, and also reduces mortality with relative risk reduction 48%.

**Conclusion:** Our systematic review found that macitentan reduced morbidity and mortality among patient with PAH. In the future, the availability of macitentan in Indonesia will makes it one of options in PAH treatment.

**Keywords:** critical appraisal; macitentan; pulmonary arterial hypertension; mortality; morbidity