Overactive bladder (OAB)/storage LUTS, a multifactorial and common condition, affecting 30–40% of the population >75 yr of age, is characterized by nocturnal micturition and urgency episodes, with a consequent worsening of quality of life. The hypothesis that we wanted to verify with this systematic review and meta-analysis is the assessment of mirabegron efficacy, a β₃-adrenoceptor agonist, in two different dosages in the reduction of urgency and nocturia episodes.

**Results**

The search extracted 491 studies from the relevant databases. After a thorough evaluation of each study, 8 RCTs were identified. Mirabegron 50 mg (Mir50), mirabegron 100 mg (Mir100) and tolterodine 4 mg (Tol) were all significantly associated with the reduction of urgency episodes when compared to placebo. Mir50 showed greater efficacy versus placebo in the reduction of urgency episodes (WMD: -0.13; p=0.003) and versus Tol (WMD: -0.07; p=0.036). Conversely, Mir100 was not associated with a significant reduction of nocturia episodes compared to placebo (WMD: -0.05; p=0.36). Further, Mir100 was statistically superior to Mir50 for nocturnal episodes (WMD: -0.07;p<0.001) but not than Tol (WMD: -0.02; p=0.85), which was associated with greater efficacy than placebo (WMD: -0.29)p=0.01). Mir100 was statistically similar to Mir50 (WMD: 0.0; p=1.00) and versus Tol (WMD: -0.29;p=0.52).

**Interpretation of Results**

The efficacy of Mirabegron presents a statistically stronger evidence than Tol in reducing nocturia episodes. Every investigated dosage bring to the same conclusion. An explanation of this effect can be found in the different target of the drugs and the consequently different effects. Muscarinic receptors are not related to nocturia at the investigated dosage, but higher dosage can bring more adverse effects. At present time β₃-adrenoceptor agonist have the same outcomes, so both β₃-adrenoceptor receptors and muscarinic receptors can act on urgency episodes. The same effectiveness of both Mir50 and Mir100 on meta-analysis can be explained from the drug’s pharmacokinetic or the consequent regulation of the receptor or the reaching of the maximum drug efficacy.