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[\[PDF \(1110K\)\]](#) [\[References\]](#)**A gap junction blocker inhibits isolated whole bladder activity in normal rats and rats with partial bladder outlet obstruction**Minoru MIYAZATO¹⁾, Kimio SUGAYA¹⁾, Saori NISHIJIMA¹⁾, Masami ODA¹⁾ and Yoshihide OGAWA¹⁾

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ABSTRACT

We examined the effect of 18alpha-glycyrrhetic acid (18alpha-GA), a gap junction blocker, or propiverine hydrochloride on the activity of isolated whole bladders obtained from intact rats and rats with partial bladder outlet obstruction (BOO). Thirty-two female Sprague-Dawley rats were divided into an intact group and a BOO group. The whole bladder was harvested from each rat and isovolumetric cystometry was performed in Krebs solution. Changes of bladder activity were recorded after addition of 18alpha-GA or propiverine hydrochloride to the perfusate. Propiverine hydrochloride inhibited the amplitude and duration of contraction in both intact and BOO groups. Propiverine hydrochloride also reduced the baseline bladder pressure in the BOO group, but not in the intact group. In contrast, 18alpha-GA inhibited the amplitude and duration of bladder contraction, and also reduced the baseline pressure, in both intact and BOO groups. BOO bladders showed inhibition of the amplitude and duration of bladder contraction at lower concentrations of 18alpha-GA than intact bladders. A gap junction blocker suppressed the *in vitro* activity of BOO bladders more effectively than that of intact bladders. Therefore, inhibition of intercellular communication in the bladder via gap junctions may be useful for treating detrusor overactivity, as well as propiverine hydrochloride.

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