

## PP-024

### The effect of diclofenac sodium on renal function alterations following reversible unilateral ureteric obstruction in the rat

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**Objectives:** To investigate the renal effect of diclofenac sodium, when administered similar to its use in the clinical practice, two weeks following different periods of complete reversible unilateral ureteric obstruction in the rat using accurate indicators of renal function.

**Methods:** Male Wistar rats underwent reversible left ureteric obstruction for 2 days (D2-untreated (n=8) and D2-DS (n=8) groups) and 5 days (D5-untreated (n=7) and D5-DS (n=7) groups). D2-DS and D5-DS received intramuscular diclofenac sodium (3 mg/kg/day) during the time of obstruction, whereas D2-untreated and D5-untreated did not receive any treatment. The renal functions of both kidneys were studied 2 weeks following the reversal.

**Results:** The basal heart rate and mean arterial blood pressure were similar in D2-untreated and D2-DS and in D5-untreated and D5-DS group. In the D2-untreated group, the GFR and RBF of the left obstructed kidney were 76% and 72% that of the right non-obstructed kidney ( $0.99 \pm 0.06$  vs.  $1.30 \pm 0.08$  ( $P < 0.05$ ) and  $4.25 \pm 0.33$  vs.  $5.92 \pm 0.61$  ( $P < 0.05$ ), respectively). The urine volume and urinary and fractional sodium excretion were not significantly different from the right kidney. Similar response was obtained in the D2-DS group. In the D5-untreated group, the GFR and RBF of the left kidney was 66% and 62% that of the right kidney ( $0.80 \pm 0.12$  vs.  $1.21 \pm 0.6$ ,  $P < 0.05$  and  $3.79 \pm 0.32$  vs.  $6.16 \pm 0.59$ ,  $P < 0.05$ ; respectively). The tubular functions of both kidneys were similar.

In the D5-DS group, there was no difference in GFR or RBF between both kidneys ( $1.02 \pm 0.08$  vs.  $1.12 \pm 0.3$ ,  $P = 0.24$  and  $5.10 \pm 1.25$  vs.  $6.46 \pm 1.11$ ,  $P = 0.44$ ; respectively). Similarly, there was no difference in the tubular functions.

**Conclusions:** Treatment with diclofenac sodium during a relatively long period of reversible unilateral ureteric obstruction, similar to its use in the management of ureteric colic, appears to ameliorate the alterations in the haemodynamic glomerular functions at least two weeks following the reversal of obstruction.