

## THE TRIPLE WHAMMY – SAFE PRESCRIBING – A DANGEROUS TRIO

1. ACE inhibitor or angiotensin II receptor antagonist ('sartan')
2. Diuretic
3. Non-steroidal anti-inflammatory drug (NSAID) or COX-2 inhibitor ('coxib')

- ▶ AVOID THIS COMBINATION IF POSSIBLE
- ▶ BE AWARE OF THE RISK FACTORS OF RENAL FAILURE
- ▶ TAKE CARE WITH OLDER ADULTS
- ▶ ADVISE PATIENTS WHO ARE PRESCRIBED ACE INHIBITORS AND DIURETICS NOT TO 'SELF-MEDICATE' WITH NSAIDs

The *Triple Whammy* is defined as 'three simultaneous deleterious blows with compounded effect'. The combination of medicines above can result in significant patient harm; used individually or combined, they are involved in more than half of reported iatrogenic (treatment-related) acute renal failure cases.

### AVOID THIS COMBINATION IF POSSIBLE

The combination of all three of these medicines should be avoided in those with risk factors for renal failure. Older adults and patients with co-morbidities, such as heart failure or severe liver disease, have an increased risk of renal failure.

ACE inhibitors and NSAIDs adversely affect renal blood flow and diuretics have the potential to cause dehydration. Further, NSAIDs antagonise the control of hypertension by ACE inhibitors and diuretics and their beneficial effects in heart failure.

If NSAIDs are unavoidable, use at the **lowest dose** for the **shortest duration** possible in those with risk factors for renal failure. Check renal function at baseline and periodically during treatment.

### Monitoring Recommendations

Medication	Interaction with NSAIDs	Recommendation
ACE inhibitors	↓Antihypertensive effect ↑Risk of renal impairment Hyperkalaemia	Monitor blood pressure, weight and renal function. Monitor serum potassium
Diuretics	↓Diuretic effect ↑Risk of renal failure Heart failure may be exacerbated	Monitor blood pressure, weight and renal function
ACE inhibitors + diuretics	↑Risk of renal failure	<b>AVOID</b> combination with NSAIDs if possible

### BE AWARE OF THE RISK FACTORS OF RENAL FAILURE

Dehydration from vomiting, diarrhoea or sepsis can be a trigger for renal failure; minor illness can place susceptible patients at risk if they are taking *Triple Whammy* combinations. Advise patients to avoid hypovolaemia (drink plenty of water) and to seek medical advice if they become acutely unwell.

#### Vomiting → hypovolaemia → precipitation of renal failure

Prescribers may also wish to **consider stopping NSAIDs** in these circumstances and to monitor renal function and serum potassium levels.

### TAKE CARE WITH OLDER ADULTS

Older patients are especially vulnerable to the *Triple Whammy* because they often have a degree of pre-existing renal impairment. They may also be prone to diuretic-induced dehydration and hypotension, and have an inadequate fluid intake.

#### Prescribing NSAIDs in older adults

Due to the increased susceptibility of adverse effects from NSAIDs, the New Zealand Formulary recommends the following:

#### Osteoarthritis, soft-tissue lesions, or back pain:

- Try weight reduction first (if obese), warmth, exercise, and use of a walking stick

#### Osteoarthritis, soft-tissue lesions, back pain or pain in rheumatoid arthritis:

- Try paracetamol first **OR** low-dose NSAID (e.g. Ibuprofen up to 1.2 g daily)
- If inadequate try full dose paracetamol **plus** a low-dose NSAID
- If necessary, increase NSAID dose **OR** use an opioid analgesic\* **with** paracetamol

\* note constipation risk

▶ continued

## ▶ THE TRIPLE WHAMMY

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### ADVISE PATIENTS WHO ARE PRESCRIBED ACE INHIBITORS AND DIURETICS NOT TO 'SELF-MEDICATE' WITH NSAIDs

Combination ACE inhibitor or angiotensin II receptor antagonists **with** diuretics (eg Inhibace Plus<sup>®</sup>) are useful products, however, always advise patients to avoid self-medicating with 'over-the-counter' NSAIDs if they are taking these products.

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#### ACKNOWLEDGEMENTS

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#### KEY REFERENCES

1. New Zealand Formulary. Non steroidal anti-inflammatory drugs. [www.nzf.org.nz/nzf\\_5476.html#nzf\\_5487](http://www.nzf.org.nz/nzf_5476.html#nzf_5487) (Accessed 15-02-13)
2. Best Practice Advisory Centre. Monitoring renal function in the elderly. [www.bpac.org.nz/resources/other/audits/bpac\\_2012\\_audit\\_elderly\\_renal\\_pf.pdf](http://www.bpac.org.nz/resources/other/audits/bpac_2012_audit_elderly_renal_pf.pdf) (Accessed 15-02-13)
3. Medsafe (New Zealand Medicines and Medical Devices Safety Authority). NSAIDs and acute kidney injury. Prescriber Update 2013;34 (2):14-5 <http://medsafe.govt.nz/profs/PUArticles/June2013NSAIDS.htm> (Accessed 10-06-13)
4. New Zealand Formulary. Prescribing for the elderly. [www.nzf.org.nz/nzf\\_192.html#nzf\\_201](http://www.nzf.org.nz/nzf_192.html#nzf_201) (Accessed 18-02-13)

[CLICK HERE FOR FURTHER INFORMATION ON THE TRIPLE WHAMMY AND A FULL REFERENCE LIST](#)

▶ For further information on other high-risk medicines visit our website at: [www.saferx.co.nz](http://www.saferx.co.nz)

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