Prednisone (Lodotra®) for the indication 'active rheumatoid arthritis' Pharmacotherapeutic report, summary

Approved on 26-10-2012 by the Medicinal Products Reimbursement Committee (CFH)

Medicine, modified-release tablets, 1, 2 or 5 mg

Registered indication. "the treatment of moderate to severe active rheumatoid arthritis in adults, particularly when accompanied by morning stiffness"

Posology. 2-10 mg once daily, taken at bedtime (around 22.00 hours)

Mechanism of action. Prednisone inhibits inflammatory reactions in the body by reducing the concentrations of cytokines. The plasma levels of pro-inflammatory cytokines, such as tumour-necrosis factor-a and interleukin (IL)-6, peak in patients with rheumatoid arthritis (RA) at 6 and 7 o' clock in the morning. A sufficiently high night-time prednisone concentration reduces the peak concentration of the pro-inflammatory cytokines in the early morning and reduces symptoms of inflamed joints upon waking (early morning stiffness). Such a night-time concentration of prednisone can be achieved by taking modified-release (MR) prednisone at 22.00 hours.
The difference between MR prednisone and IR (immediate release) prednisone is the coating. Due to this coating, the active ingredient of MR prednisone is not released immediately after being taken, but 4-6 hours later. Taking MR prednisone at 22.00 hours leads to a peak serum level between 4 and 6 o' clock in the morning. Taking IR prednisone at 07.00 hours in the morning, as usual, leads to a peak serum level between 9 and 11 o' clock in the morning. Prednisone is metabolised to form the active component prednisolone. The biological action of prednisone occurs later than would be expected on the grounds of the increase in the plasma level.

Summary of the therapeutic value

Intended effects. There is no evidence that MR prednisone in patients with active RA reduces morning stiffness more than IR prednisone. The time of administration may be of greater importance than the choice of product. For other outcome measures, MR prednisone in the evening did not prove more effective than IR prednisone in the morning.

Unintended effects. There is no evidence of differences in the nature and frequency of unintended effects between MR prednisone and IR prednisone.

Experience. Experience with MR prednisone is limited, while ample experience has been gained with IR prednisone.

Applicability. There are no major differences in applicability between MR prednisone and IR prednisone. They have the same contraindications and interactions. MR prednisone is not registered for use in children while IR prednisone is.

Ease of use. There are no major differences regarding the method or frequency of administration between MR prednisone and IR prednisone. One disadvantage of MR prednisone is that it is taken with a (small) evening meal or snack at an unusually late hour.

Final conclusion. The therapeutic value of MR prednisone is equal to that of IR prednisone for the treatment of adult patients with moderate to severe active rheumatoid arthritis for whom morning stiffness can be a debilitating symptom.