FAST FACTS AND CONCEPTS #395
CORTICOSTEROIDS FOR COMMON PALLIATIVE CARE SYMPTOMS
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Background: This Fast Fact reviews the evidence for corticosteroids which are often prescribed to address symptoms common to patients with terminal illnesses (1).

Pharmacology: Dexamethasone is often selected in palliative care given its prolonged half-life, multiple routes of administration, and relatively low mineralocorticoid effect (thus less likelihood of fluid retention) (2). Prednisone, prednisolone, and methylprednisolone may be acceptable alternatives depending on the clinical circumstance. Prednisone is converted by liver enzymes to the active compound prednisolone. Therefore, prednisolone or methylprednisolone are preferred in liver impairment (3).

Adverse Effects: Although the risk of adverse effects increases with dose and duration of any corticosteroid, long-term treatment (e.g., longer than a month) with relatively low doses (defined as a prednisone 5 mg or less) is generally well tolerated (4).
- Early adverse effects (seen in days): hyperglycemia, fluid retention, and mental disturbances (insomnia, agitation, euphoria, paranoia, see Fast Fact #323).
- Late adverse effects (weeks to months): myopathy leading to proximal limb muscle weakness and reduced respiratory force; infection risk (especially fungal such as oral thrush); additive risk of GI bleed with NSAIDS (5). Proton pump inhibitors and/or H2 antagonists are likely only needed for daily doses of ≥ 140 mg of dexamethasone or those taking concomitant NSAIDs (6).

Considerations when prescribing corticosteroids:
- Monitor regularly. Aim to discontinue corticosteroids within 5–7 days if there is an insufficient clinical response. Doing so can prevent the need to reduce the dose gradually (taper).
- Aim for the lowest therapeutic dose to prevent side effects. If taking ≤ 4 mg of dexamethasone (or its equivalent) for 3 weeks or less, it is likely safe to stop steroids abruptly without a taper (4).
- Unless an emergency, most corticosteroids can be administered once daily in the morning, or twice daily with the last dose before 2:00 pm. This dosage schedule reduces suppression of the hypothalamic-adrenal axis and the risk of insomnia (3).
- Consider prognosis. Side-effects become a cumulative problem when prognosis is months or more.
- Monitor for hyperglycemia, especially in patients with an anticipated prognosis of months or more.
- Consult the primary oncologist before starting corticosteroids, as they may impact the effectiveness of immune-based systemic cancer treatments.

<table>
<thead>
<tr>
<th>Glucocorticoid (3,7,8)</th>
<th>Dose Equivalent</th>
<th>Available Routes</th>
<th>Common Dosage</th>
<th>Weekly Cost* (US $)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prednisone</td>
<td>4-6 mg</td>
<td>PO</td>
<td>5-40 mg/day in 1-2 doses</td>
<td>$5-10</td>
</tr>
<tr>
<td>Prednisolone</td>
<td>5 mg</td>
<td>PO solution</td>
<td>5-60 mg/day in 1-2 doses</td>
<td>$20-45</td>
</tr>
<tr>
<td>Methyl-prednisolone</td>
<td>8 mg</td>
<td>IV, IM, PO</td>
<td>4-8 mg QID (oral); 40-125 mg/day in 1-2 doses (IV/IM)</td>
<td>$10-35</td>
</tr>
<tr>
<td>Dexamethasone</td>
<td>0.75 mg</td>
<td>PO, IV, IM, SQ</td>
<td>2-8 mg/day in 1-2 doses</td>
<td>$5-50</td>
</tr>
</tbody>
</table>

*Approximate weekly cost of generic version of the most common prescribed PO dose.

<table>
<thead>
<tr>
<th>Symptom (Suggested dexamethasone dose) (2,6,9)</th>
<th>Supporting clinical evidence in palliative care</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancer Related Fatigue (CRF): (2-4 mg a day)</td>
<td>CRF and quality of life (QOL) benefits noted via improvements in Functional Assessment of Chronic Illness-Fatigue (FACIT-F) total QOL and subscale scores at day 15 of administration compared to placebo (10).</td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
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<td>----------------------------------------</td>
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<tr>
<td><strong>Nausea and Vomiting</strong> (4-8 mg a day)</td>
<td>Dexamethasone can prevent chemotherapy-induced nausea and vomiting, especially when combined with ondansetron or granisetron (11-13). There is only low-quality evidence supporting its effectiveness for nausea or vomiting unrelated to chemotherapy (14).</td>
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<tr>
<td><strong>Anorexia and Cachexia</strong> (2-4 mg a day)</td>
<td>Dexamethasone may improve appetite in 68.5% of palliative care patients after a 7-day treatment course (15). Methylprednisolone may improve appetite in up to 77% of terminally ill patients after a 14-day course (16).</td>
</tr>
<tr>
<td><strong>Dyspnea</strong> (4-8 mg a day)</td>
<td>There is mixed evidence for dexamethasone or prednisone to relieve dyspnea in patients with a terminal illness (17). There is no supporting evidence for methylprednisolone to prevent or relieve dyspnea in the terminally ill. Many clinicians target corticosteroid use to those with emphysema or asthma.</td>
</tr>
<tr>
<td><strong>Pain</strong> (8 mg a day)</td>
<td>Dexamethasone is commonly prescribed for cancer-related bone pain, neuropathic pain, liver capsular pain, and radiation-induced pain (18,19). While dexamethasone and methylprednisolone have been shown to decrease patients’ numeric pain score (most substantially for radiation-induced pain flares), the results have not always been significant (18-20).</td>
</tr>
<tr>
<td><strong>Malignant bowel obstruction (MBO)</strong> (8 mg a day)</td>
<td>Literature on the effectiveness of dexamethasone to alleviate MBO or the symptoms associated has offered mixed results (21). There is no convincing evidence for the use of methylprednisolone to prevent or treat MBO.</td>
</tr>
<tr>
<td><strong>Metastatic Extradural Spinal Cord Compression (MESCC)</strong> (10 mg IV x1; then 16 mg/day)</td>
<td>The evidence supporting dexamethasone to reduce pain and improve function from MESCC is promising but limited (22,23). See Fast Fact #238 for details on MESCC management. There is no supporting evidence for prednisone or methylprednisolone in those with a terminal illness and MESCC.</td>
</tr>
<tr>
<td><strong>Other Urgent Palliative Care Conditions</strong> (10 mg IV x 1; then 16 mg/day)</td>
<td>Experts suggest similar dexamethasone dosing to palliate symptoms related to malignancy-induced intracranial pressure, superior vena cava syndrome, tracheal obstruction, and lymphangitis carcinomatosis; however, there is no controlled data for these indications.</td>
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</tbody>
</table>

References


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