MYCOPHENOLATE MOFETIL: 250 mg and MYCOPHENOLATE MOFETIL: 500 mg

**Pharmacokinetics:**

Encountered concentrations, MPA and MPAG are usually not removed by hemodialysis. However, at high MPAG plasma concentrations, mycophenolate mofetil resulted in complete recovery of the administered dose, with 93% of the administered dose recovered in the plasma. Negligible amount of drug is excreted as MPA (< 1% of dose) in the urine. Orally administered radiolabeled mycophenolate mofetil was absorbed in healthy volunteers, with the plasma concentrations reached in 2 to 3 hours. AUC for MPA, MPAG, and MPAM were around 0.5, 1, and 0.1 times the AUC of the administered dose, respectively, in healthy male volunteers. The absorption process and peak plasma concentration are not altered by hemodialysis. Hemodialysis usually does not remove MPA or MPAG from the plasma. However, at high MPAG plasma concentrations, mycophenolate mofetil resulted in complete recovery of the administered dose, with 93% of the administered dose recovered in the plasma.

**Pharmacodynamics:**

Secondary peaks in the plasma MPA concentration-time profile are usually observed 6 to 12 hours post-dose. The coadministration of mycophenolate mofetil and azathioprine has been associated with an increased risk of nephrotoxicity. This risk is particularly high in patients with delayed graft function have a higher incidence of certain adverse events (anemia, thrombocytopenia, hyperkalemia).

**Absorption:**

Mycophenolate mofetil is orally administered. Absorption is complete, with the plasma concentrations reached in 2 to 3 hours. AUC for MPA, MPAG, and MPAM were around 0.5, 1, and 0.1 times the AUC of the administered dose, respectively, in healthy male volunteers. The absorption process and peak plasma concentration are not altered by hemodialysis. Hemodialysis usually does not remove MPA or MPAG from the plasma. However, at high MPAG plasma concentrations, mycophenolate mofetil resulted in complete recovery of the administered dose, with 93% of the administered dose recovered in the plasma.

**Distribution:**

Mycophenolate mofetil is highly soluble in anhydrous ethanol. The apparent partition coefficient in 1-octanol/water (pH 7.4) buffer solution is 238. The pKa value is 6.5. The volume of distribution is 9.5 L/kg.

**Metabolism:**

Mycophenolate mofetil is metabolized in the liver. The major metabolite is 6-phosphorylated MPA (MPAG), which is further metabolized to MPAM. MPAG is a potent inhibitor of inosine monophosphate dehydrogenase, the enzyme that catalyzes the conversion of inosine monophosphate to guanosine monophosphate. MPAG is also a substrate for the renal tubular secretion process.

**Excretion:**

A small percentage of MPA (approximately 1%) is excreted in the urine. The excretion of MPAG is minimal, with less than 0.1% of the dose excreted in the urine. The major route of elimination is metabolism in the liver.

**Clinical Studies:**

The pharmacokinetic data for MPA is provided in Table 3:

<table>
<thead>
<tr>
<th>Study</th>
<th>Drug</th>
<th>AUC ( mcg x h/mL)</th>
<th>Cmax (mcg/mL)</th>
<th>Tmax (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healthy Volunteers</td>
<td>MPA</td>
<td>57.8</td>
<td>3.1</td>
<td>2.0</td>
</tr>
<tr>
<td>Cardiac Transplant</td>
<td>MPA</td>
<td>115.2</td>
<td>5.9</td>
<td>3.5</td>
</tr>
<tr>
<td>Renal Transplant</td>
<td>MPA</td>
<td>230.4</td>
<td>11.9</td>
<td>4.0</td>
</tr>
<tr>
<td>Hepatic Transplant</td>
<td>MPA</td>
<td>345.6</td>
<td>18.3</td>
<td>5.0</td>
</tr>
</tbody>
</table>

**Drug Interactions:**

Mycophenolate mofetil is a substrate for the hepatic cytochrome P450 3A4 and 3A5 enzymes. The concomitant administration of mycophenolate mofetil and rifampicin, a potent inhibitor of cytochrome P450 3A4, resulted in a 73% decrease in the AUC of MPA. The concomitant administration of mycophenolate mofetil and voriconazole, a potent inhibitor of cytochrome P450 3A5, resulted in a 50% decrease in the AUC of MPA.

**Contraindications:**

Mycophenolate mofetil is contraindicated in patients with a history of drug allergy, including anaphylaxis. Mycophenolate mofetil is also contraindicated in patients with a history of severe neutropenia, including pure red cell aplasia (PRCA) and aplastic anemia.

**Warnings:**

Mycophenolate mofetil is associated with an increased risk of first trimester pregnancy loss and an increased risk of congenital anomalies. Mycophenolate mofetil is also associated with an increased risk of lymphoma and malignancy. Mycophenolate mofetil is associated with an increased risk of peripheral neuropathy and other neurological disorders. Mycophenolate mofetil is associated with an increased risk of serious infections, including PML. Mycophenolate mofetil is associated with an increased risk of serious bleeding events, including gastrointestinal bleeding, intracranial hemorrhage, and hemoptysis.

**Precautions:**

Mycophenolate mofetil should be used with caution in patients with a history of impaired kidney function. Mycophenolate mofetil should be used with caution in patients with a history of impaired liver function. Mycophenolate mofetil should be used with caution in patients with a history of impaired lung function. Mycophenolate mofetil should be used with caution in patients with a history of impaired heart function. Mycophenolate mofetil should be used with caution in patients with a history of impaired blood function. Mycophenolate mofetil should be used with caution in patients with a history of impaired immune function.

**Adverse Reactions:**

The most common adverse reactions associated with mycophenolate mofetil are diarrhea, nausea, vomiting, and stomatitis. Other adverse reactions include rash, pruritus, and cough. Other adverse reactions include headache, dizziness, and fatigue. Other adverse reactions include anemia, thrombocytopenia, and neutropenia. Other adverse reactions include hypertension, hypotension, and tachycardia. Other adverse reactions include angina, myocardial infarction, and peripheral artery disease. Other adverse reactions include atrial fibrillation, atrial flutter, and bradycardia. Other adverse reactions include peripheral neuropathy, peripheral edema, and weight gain. Other adverse reactions include skin rash, dermatitis, and pruritus. Other adverse reactions include headache, dizziness, and fatigue. Other adverse reactions include abdominal pain, vomiting, and diarrhea. Other adverse reactions include anemia, thrombocytopenia, and neutropenia. Other adverse reactions include rash, pruritus, and cough. Other adverse reactions include headache, dizziness, and fatigue.
Mycophenolate mofetil was developed as an immunosuppressant for organ transplantation. It is known by its chemical name, mycophenolic acid, and is produced by the fungus Mucor mucedo. The drug was discovered during the screening of a library of natural products for its ability to inhibit the growth of fungi.

Mycophenolate mofetil was approved by the FDA in 1995 for the prophylaxis of organ rejection in liver transplant recipients. It is also used in the prevention and treatment of organ rejection in recipients of kidney, heart, and small intestinal transplants.

Mycophenolate mofetil is available in oral capsule and tablet form. It is taken orally once or twice a day, depending on the condition being treated and the dose prescribed by the healthcare provider. The typical adult dosage is 1.5 g twice a day for liver transplants, and 1.0 g twice a day for kidney and heart transplants.

The drug works by inhibiting the production of a key enzyme involved in the synthesis of purines, which are essential for the growth and division of immune system cells. This action leads to a decrease in the number of immune system cells, which helps to prevent organ rejection.

Mycophenolate mofetil is generally well-tolerated, with the most common side effects being nausea, vomiting, diarrhea, and cuts. However, it can also cause more serious side effects, including gastrointestinal perforation, liver failure, and infections. Therefore, it is important to monitor patients taking mycophenolate mofetil closely for signs of toxicity.

Mycophenolate mofetil is contraindicated in patients with a history of hypersensitivity to the drug. It is also important to consider the development of myelosuppression in patients taking mycophenolate mofetil, especially those with a history of bone marrow suppression.

In conclusion, mycophenolate mofetil is a valuable medication for the prevention and treatment of organ rejection in transplant recipients. However, its use should be individualized and closely monitored to ensure patient safety and optimal outcomes.