Asamax® 500
Mesalazine (5-aminosalicylic acid) 500mg gastro-resistant tablets

Presentation
Asamax 500 gastro-resistant tablet 500 mg: yellow ochre coloured biconvex tablets containing 500 mg mesalazine (5-aminosalicylic acid). Length approx 17 mm, average, weight approx. 750 mg

Uses

Actions
Pharmacotherapeutic group: Intestinal anti-inflammatory agents (A07 EC02).

It has been established that mesalazine is the active component of sulfasalazine, which is used for the treatment of ulcerative colitis and Crohn's disease.

Based on clinical results, the therapeutic value of mesalazine after oral as well as rectal administration appears to be due to local effect on the inflamed intestinal tissue, rather than to systemic effect.

Increased leucocyte migration, abnormal cytokine production, increased production of arachidonic acid metabolites, particularly leukotriene B4, and increased free radical formation in the inflamed intestinal tissue are all present in patients with IBD. Mesalazine has in vitro and in vivo pharmacological effects that inhibit leucocyte chemotaxis, decrease cytokine and leukotriene production and scavenge for free radicals. It is currently unknown which, if any, of these mechanisms play a predominant role in the clinical efficacy of mesalazine.

Pharmacokinetics

General characteristics of the active substance

Disposition and local availability
The therapeutic activity of mesalazine most likely depends on local contact of the medicine with the diseased area of the intestinal mucosa.

Asamax tablets consist of a compressed mesalazine tablet core coated with a gastro-resistant coating. Following administration tablet disintegration occurs in the last part of the small intestine and in the ascending colon interstitial fluid, releasing mesalazine for local action.

The transit and release of mesalazine after oral administration is independent of food co-administration, whereas the systemic absorption will be reduced.

Absorption
5 - 20% of the ingested dose will be absorbed following oral administration, predominantly from the large intestine.

Following oral administration of Asamax tablets, mesalazine is detectable in plasma approximately 5 hours following administration. Maximum plasma concentrations are seen 8.5 hours post-dose.
**Distribution**

Mesalazine and acetyl-mesalazine do not cross the blood-brain barrier. Protein binding of mesalazine is approximately 50% and of acetyl-mesalazine about 80%.

After a gradual decrease, mesalazine will no longer be detectable 12 hours post-dose. The plasma concentration curve for acetyl-mesalazine follows the same pattern, but the concentrations are generally higher and the elimination is slower.

The metabolic ratio of acetyl-mesalazine to mesalazine in plasma **after oral administration** ranges from 3.5 to 1.3 after 500mgx3 and 2gx3 dosages, respectively, implying a saturable dose-dependent acetylation.

Mean steady-state plasma concentrations of mesalazine are approximately 2 micromol/L, 8 micromol/L and 12 micromol/L after 1.5g, 4g and 6g daily dosages, respectively. For acetyl-mesalazine the corresponding concentrations are 6 micromol/L, 13 micromol/L and 16 micromol/L.

**Biotransformation**

Mesalazine is metabolised both pre-systemically by the intestinal mucosa and systemically in the liver to N-acetyl-mesalazine (acetyl-mesalazine). Some acetylation also occurs through the action of colonic bacteria. The acetylation seems to be independent of the acetylator phenotype of the patient.

Acetyl-mesalazine is thought to be clinically as well as toxicologically inactive, but this still needs final confirmation.

**Elimination**

The plasma half-life of pure mesalazine is approximately 1 hour and for acetyl-mesalazine several hours. Both substances are excreted with the urine and faeces. The urinary excretion consists mainly of acetyl-mesalazine.

**Characteristics in patients**

For use in patients with impaired liver and kidney functions, the resultant decrease in the rate of elimination and increased systemic concentration of mesalazine may constitute an increased risk of nephrotoxic adverse reactions.

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**Indications**

The treatment of:

i) Crohn's disease localised to the colon
ii) mild to moderate ulcerative colitis.

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**Dosage and Administration**

**Ulcerative colitis**

**Treatment of active disease:**

*Adults:* Individual dosage, up to 2 - 4g daily in divided doses.

*Children:* Individual dosage, starting with 20-30mg/kg bodyweight daily in divided doses.
Maintenance treatment:

Adults: Individual dosage, starting with 1.5-2g daily in divided doses.
Children: Individual dosage, starting with 20-30mg/kg bodyweight daily in divided doses.

_Crohn’s disease_

Treatment of active disease:

Adults: Individual dosage, up to 4g daily in divided doses.
Children: Individual dosage, starting with 20-30mg/kg bodyweight daily in divided doses.

Maintenance treatment:

Adults: Individual dosage, up to 4g daily in divided doses.
Children: Individual dosage, starting with 20-30mg/kg bodyweight daily in divided doses.

Asamax tablets must be taken whole and must not be divided. Asamax tablets should be taken after meals with some liquid. The tablets must not be chewed.

**Contraindications**

Hypersensitivity to mesalazine, any other component of the product, or salicylates.

Severe liver and/or renal impairment.

Increased tendency to bleeding.

Active ulcers of the stomach and/or duodenum.

**Warnings and Precautions**

Most patients who are intolerant or hypersensitive to sulfasalazine are able to take Asamax without risk of similar reactions. However, caution is recommended when treating patients allergic to sulfasalazine (risk of allergy to salicylates).

Caution is recommended in patients with impaired liver function. Liver function parameters like ALT or AST should be assessed prior to and during treatment, at the discretion of the treating physician. The medicine is not recommended for use in patients with renal impairment. Mesalazine-induced nephrotoxicity should be suspected in patients developing renal dysfunction during treatment. The renal function should be regularly monitored (e.g. serum creatinine), especially during the initial phase of treatment. The concurrent use of other known nephrotoxic agents, such as NSAIDs and azathioprine, may increase the risk of renal reactions.

Mesalazine-induced cardiac hypersensitivity reactions (pleuropericarditis) and serious blood dyscrasias have rarely been reported with mesalazine. Concomitant treatment with mesalazine can increase the risk of dyscrasia in patients receiving azathioprine or 6-mercaptopurine. Treatment should be discontinued on suspicion or evidence of these adverse reactions.

Asamax is not recommended for use in infants and toddlers below 2 years due to a lack of data on safety and/or efficacy.

As with all salicylic acid derivatives, special caution is recommended in patients with Chronic Non Specific Lung Disease (CNSLD) due to the potential for hypersensitivity reactions.

**Pregnancy and Lactation**
Mesalazine is a Pregnancy Category C medication (drugs which, owing to their pharmacological effects, have caused or may be suspected of causing, harmful effects on the human fetus or neonate without causing malformations. These effects may be reversible. Accompanying texts should be consulted for further details).

Asamax should be used with caution during pregnancy and lactation and only if the potential benefits outweigh the possible hazards in the opinion of the physician.

Mesalazine is known to cross the placental barrier, but the limited data available on the use of this compound in pregnant women do not allow the assessment of possible noxious effects. No teratogenic effects have been observed in animal studies.

Mesalazine is excreted in breast milk. The concentration is much lower than in maternal blood, whereas the metabolite - acetyl-mesalazine - appears in similar concentrations. There is limited experience of the use of oral mesalazine in lactating women.

** Effects On Ability To Drive And Use Machines**

Treatment with Asamax is unlikely to affect the ability to drive and/or use machines. When driving or operating machinery, the potential occurrence of dizziness or headache should be borne in mind.

**Adverse Effects**

The most frequent adverse reactions seen in clinical trials are diarrhoea (3%), nausea (3%), abdominal pain (3%), headache (3%), vomiting (1%) and rash (1%). Hypersensitivity reactions and drug fever may occasionally occur.

<table>
<thead>
<tr>
<th>System Organ Class</th>
<th>Common &gt;1/100, &lt;1/10</th>
<th>Uncommon &gt;1/1000, &lt;1/100</th>
<th>Rare &gt;1/10,000, &lt;1/1000</th>
<th>Very rare &lt;1/10,000</th>
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</thead>
<tbody>
<tr>
<td>Blood and the lymphatic system disorders</td>
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<tr>
<td>Eosinophilia (as part of an allergic reaction), leucopenia (including granulocytopenia and neutropenia), thrombocytopenia, agranulocytosis, bone marrow depression, increased methaemoglobin levels</td>
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<tr>
<td>Immune system disorders</td>
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<tr>
<td>Pancolitis, hypersensitivity reaction</td>
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<tr>
<td>Nervous system disorders</td>
<td>dizziness</td>
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<tr>
<td>Peripheral neuropathy</td>
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<tr>
<td>Cardiac disorders</td>
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<tr>
<td>pleuropericarditis*</td>
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<td>Respiratory, thoracic and mediastinal disorders</td>
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<tr>
<td>Allergic and fibrotic lung reactions (including dyspnoea, coughing, bronchospasm, allergic alveolitis, eosinophilic pneumonia, interstitial lung disease, pulmonary infiltration, pneumonitis, pleuritis)</td>
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<tr>
<td>Gastrointestinal disorders</td>
<td>nausea, diarrhoea, vomiting, abdominal pain</td>
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<td>pancreatitis*</td>
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<tr>
<td>System Organ Class</td>
<td>Common &gt;1/100, &lt;1/10</td>
<td>Uncommon &gt;1/1000, &lt;1/100</td>
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<td>Hepato-biliary disorders</td>
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<td>hepatitis*, cholestatic hepatitis, cirrhosis, hepatic failure</td>
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<td>Skin and subcutaneous tissue disorders</td>
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<td>allergic dermatitis</td>
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<td>Musculoskeletal and connective tissue disorders</td>
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<td>Myalgia, arthralgia, lupus-like syndrome</td>
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<td>Reproductive system disorders</td>
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<td></td>
<td>Oligospermia (reversible)</td>
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<td>Psychiatric disorders</td>
<td>mood swings</td>
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<tr>
<td>Renal and urinary disorders</td>
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<td></td>
<td>nephritis interstitial*, nephrotic syndrome, renal failure</td>
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<tr>
<td>General disorders and administration site conditions</td>
<td>headache</td>
<td>fever</td>
<td></td>
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<tr>
<td>Investigations</td>
<td></td>
<td></td>
<td>blood methaemoglobin present</td>
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</table>

(*) The mechanism of pleuropericarditis, pancreatitis, hepatitis, or interstitial nephritis caused by Asamax is unknown, but it could be of an allergic origin.

It is important to note that several of these disorders also can be attributed to the inflammatory bowel disease itself.

**Interactions**

The blood sugar level lowering effect of sulfonylureum-derivatives and coumarin-induced gastro-intestinal bleeding may be enhanced by mesalazine as well as the toxicity of methotrexate.

The uricosurical effect of probenecid and sulfinpyrazone and the diuretic effect of furosemide and spironolactone may be decreased by mesalazine. The anti-tuberculosis effect of rifampicin may be weakened. Mesalazine can induce the unwanted effects of glucocorticoids on the stomach. Theoretically, caution should be practiced in the case of concomitantly administered anti-coagulants.

**Overdosage**

**Acute experience in animals**

Single oral doses of mesalazine up to 5g/kg in pigs or a single intravenous dose of mesalazine at 920mg/kg in rats were not lethal.

**Human experience**

No cases of overdose have been reported.

**Management of overdose in man**

Contact the National Poisons Centre on 0800 POISON or 0800 764 766 for advice on overdosage management.

**Pharmaceutical Precautions**

**Instructions For Use/Handling**
Asamax tablets must be taken whole and must not be divided. The tablets should be taken after meals with some liquid. The tablets must not be chewed.

Different oral formulations of mesalazine should not be regarded as interchangeable.

**Incompatibilities**
None known.

**Shelf-Life**
5 years in original packaging.

**Special Precautions for Storage**
Store in a dry place at room temperature (at or below 25°C) in original packaging. Keep out of reach of children.

**Medicine Classification**
Prescription Only Medicine.

**Package Quantities**
Asamax 500 gastro-resistant tablets 500mg– PVC/PVDC-Aluminium blister strip-packaging in cardboard boxes containing 100 tablets.

**Further Information**

**Preclinical safety data**
Definitive toxic effect on the kidney was demonstrated in all species. In general the toxic doses exceed those used in humans by a factor 5-10.

No significant toxicity associated with the gastrointestinal tract, liver, or haematopoietic system in animals has been observed.

*In vitro* test systems and *in vivo* studies showed no evidence of mutagenic effects. Studies of the tumourigenic potential carried out in rats showed no evidence of any substance-related increase in the incidence of tumours.

**List of excipients**
Ethanol is used during the manufacturing process and trace amounts could be present in the final product.

Active ingredient: mesalazine (5-ASA)

Chemical formula: C$_7$H$_7$NO$_3$

Molecular weight: 153.1

Structural formula: 5-aminosalicylic acid (5-ASA)

Tablets, 500mg:

<table>
<thead>
<tr>
<th>Active ingredient:</th>
<th>mesalazine 500mg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-medicinal ingredients:</td>
<td>microcrystalline cellulose, povidone, colloidal silicon dioxide, crospovidone, magnesium stearate, hypromellose, polyethylene glycol, methacrylic acid copolymer, triethyl citrate, talc, titanium dioxide and yellow iron oxide.</td>
</tr>
</tbody>
</table>

Name and Address

New Zealand distributor:

bioCSL (NZ) Ltd
666 Great South Road
Penrose, Auckland 1061
New Zealand

Ph: 0800 502 757

Date of Preparation

10 April 2014

Asamax® is a registered trademark of Astellas Pharma Europe B.V.