SUMMARY OF PRODUCT CHARACTERISTICS

1. NAME OF THE MEDICINAL PRODUCT

Cholecalciferol Wörwag Pharma 800 IE, zachte capsules
Cholecalciferol Wörwag Pharma 5.600 IE, zachte capsules
Cholecalciferol Wörwag Pharma 10.000 IE, zachte capsules
Cholecalciferol Wörwag Pharma 11.200 IE, zachte capsules
Cholecalciferol Wörwag Pharma 20.000 IE, zachte capsules
Cholecalciferol Wörwag Pharma 25.000 IE, zachte capsules
Cholecalciferol Wörwag Pharma 50.000 IE, zachte capsules

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

<Invented name> 800 IU soft capsules
Each soft capsule contains 800 IU cholecalciferol (equivalent to 20 micrograms vitamin D_3).

<Invented name> 5 600 IU soft capsules
Each soft capsule contains 5 600 IU cholecalciferol (equivalent to 140 micrograms vitamin D_3).

<Invented name> 10 000 IU soft capsules
Each soft capsule contains 10 000 IU cholecalciferol (equivalent to 250 micrograms vitamin D_3).

<Invented name> 11 200 IU soft capsules
Each soft capsule contains 11 200 IU cholecalciferol (equivalent to 280 micrograms vitamin D_3).

<Invented name> 20 000 IU soft capsules
Each soft capsule contains 20 000 IU cholecalciferol (equivalent to 500 micrograms vitamin D_3).

<Invented name> 25 000 IU soft capsules
Each soft capsule contains 25 000 IU cholecalciferol (equivalent to 625 micrograms vitamin D_3).

<Invented name> 50 000 IU soft capsules
Each soft capsule contains 50 000 IU cholecalciferol (equivalent to 1 250 micrograms vitamin D_3).

Excipient(s) with known effect:
Each soft capsule contains 14.4 mg sorbitol.

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

<Invented name> 800 IU soft capsules
Soft capsule
Light green, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm long × 5.5 ± 1 mm width.

<Invented name> 5 600 IU soft capsules
Soft capsule
Light blue, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm long × 5.5 ± 1 mm width.

<Invented name> 10 000 IU soft capsules

Soft capsule
Dark orange, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm long × 5.5 ± 1 mm width.

<Invented name> 11 200 IU soft capsules
Soft capsule
Purple, transparent color, round shape, soft gelatine capsule containing clear, colourless liquid and with diameter of 6.5 ± 5 mm.

<Invented name> 20 000 IU soft capsules
Soft capsule
Reddish orange, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm long × 5.5 ± 1 mm width.

<Invented name> 25 000 IU soft capsules
Soft capsule
Purple, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm in long × 5.5 ± 1 mm width.

<Invented name> 50 000 IU soft capsules
Soft capsule
Dark blue, transparent color, oval shape, soft gelatine capsule containing clear, colourless liquid with dimensions 9.5 ± 1 mm in long × 5.5 ± 1 mm width.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

- Initial treatment of vitamin D deficiency (serum 25(OH)D < 25 nmol/l) in adults and adolescents.
- Prevention of vitamin D deficiency in adults and adolescents with an identified risk.
- As an adjunct to specific therapy for osteoporosis in adult patients with vitamin D deficiency or at risk of vitamin D deficiency.

4.2 Posology and method of administration

The dosage must be determined individually by the treating doctor, depending on the extent of the necessary vitamin D_3 supplementation.

Posology

Initial treatment of vitamin D_3 deficiency (serum 25(OH)D < 25 nmol/l) in adults and adolescents aged > 12 years

800 – 4 000 IU/day or the weekly or monthly equivalent dose. The maximum cumulative dose is 120 000 IU for one month.

After the first month a lower dose should be considered, depending on the desired serum levels of 25-hydroxycholecalciferol (25(OH)D), the severity of the disease and the patient's response to treatment. Serum concentrations of 25-hydroxycalciferol and calcium should be monitored after initiation of treatment.

Prevention of vitamin D_3 deficiency in adults and adolescents older than 12 years with an identified risk

800 – 1 600 IU daily or the weekly or monthly equivalent dose. The 50 000 IU strength is not suitable

for prevention of vitamin D deficiency.

As an adjunct to specific therapy for osteoporosis in adults with vitamin D deficiency or at risk thereof
800 – 1 000 IU/day or the weekly or monthly equivalent dose. The 10 000 IU, 20 000 IU and 50 000 IU dose strengths are not suitable for the osteoporosis indication.

Special populations

Renal impairment
<Invented name> should not be used in patients with severe renal impairment (see section 4.3).

Hepatic impairment
No dose adjustment is necessary in patients with hepatic impairment.

Paediatric population
<Invented name> is not recommended for children under 12 years of age due to the risk of choking (see section 4.4). Other pharmaceutical forms may also be available.

Method of administration

<Invented name> soft capsules are taken orally and must be swallowed whole with water, preferably with the main meal of the day.

4.3 Contraindications

- hypersensitivity to the active substance or to any of the excipients listed in section 6.1;
- hypervitaminosis D;
- nephrolithiasis;
- nephrocalcinosis;
- diseases or conditions resulting in hypercalcaemia and/or hypercalciuria;
- severe renal impairment.

4.4 Special warnings and precautions for use

Monitoring
During initial and long-term treatment with cholecalciferol, the serum and urinary calcium levels should be monitored and the kidney function checked by measurement of serum creatinine. These checks are particularly important in elderly patients and in concomitant treatment with cardiac glycosides or diuretics. In the case of hypercalcaemia or signs of impaired kidney function, the dose must be reduced or treatment interrupted. It is recommended to reduce the dose or to interrupt treatment if the urinary calcium levels exceed 7.5 mmol /24 hours (300 mg /24 hours).

Renal impairment
Vitamin D_3 should be used with caution in patients with renal insufficiency, because these patients have a higher risk of hypercalcaemia. The effects on calcium and phosphate levels should be monitored. The risk of soft tissue calcification should be taken into account. Vitamin D_3 must not be used in patients with severe renal impairment (see section 4.3), since vitamin D_3 is not metabolised normally.

Sarcoidosis
Cholecalciferol should be prescribed with caution to patients suffering from sarcoidosis, as there is the risk of increased conversion of vitamin D_3 to its active metabolite. Serum and urinary calcium levels should be monitored in these patients.

Pseudohypoparathyroidism
Cholecalciferol is not recommended if pseudohypoparathyroidism is present (the need for vitamin D may be reduced by the sometimes normal sensitivity to vitamin D_3, with a risk of long-term overdose). In such cases, more manageable vitamin D_3 derivatives are available.

Other vitamin D_3 containing products
If other vitamin D_3 containing products are prescribed, the dose of vitamin D_3 contained in <Invented name> must be taken into consideration. The additional administration of vitamin D_3 should only be carried out under medical supervision.

Sorbitol
This medicine contains sorbitol. The additive effect of concomitantly administered products containing sorbitol (or fructose) and dietary intake of sorbitol (or fructose) should be taken into account.

The content of sorbitol in medicinal products for oral use may affect the bioavailability of other medicinal products for oral use administered concomitantly.

4.5 Interaction with other medicinal products and other forms of interaction

Calcium containing products
Concomitant use with calcium containing products administered in large doses may increase the risk of hypercalcaemia.

Diuretics
Thiazide diuretics reduce the excretion of calcium with urine. Regular monitoring of the serum calcium level is necessary in the case of concomitant use with thiazide diuretics or with calcium containing products taken in large doses because of the increased risk of hypercalcemia.

Phenytoin and barbiturates
Concomitant treatment with phenytoin or barbiturate can decrease the effect of vitamin D_3 because of metabolic activation.

Digitalis and other cardiac glycosides
The effects of digitalis and other cardiac glycosides may be accentuated with the oral administration of calcium combined with vitamin D_3. Strict medical supervision is needed and, if necessary, monitoring of ECG and calcium.

Ion-exchange resins, laxatives and drugs leading to fat malabsorption
Simultaneous treatment with ion exchange resins such as cholestyramine or laxatives such as paraffin oil may reduce the gastrointestinal absorption of vitamin D_3. Drugs leading to fat malabsorption, e.g. orlistat, may impair the absorption of vitamin D_3.

Actinomycin and imidazole antifungals
The cytotoxic agent actinomycin and imidazole antifungal agents interfere with vitamin D_3 activity by inhibiting the conversion of 25-hydroxyvitamin D to 1,25-dihydroxyvitamin D by the kidney enzyme, 25-hydroxyvitamin D-1-hydroxylase.

Systemic corticosteroids
Systemic corticosteroids inhibit the absorption of calcium. Long-term use of corticosteroids may offset the effect of vitamin D_3.

Magnesium containing products
Products containing magnesium (such as antacids) must not be taken during long-term treatment with high doses of vitamin D_3 because of the risk of hypermagnesaemia.

Phosphor containing products
Products containing phosphor used in large doses, given concomitantly may increase the risk of hyperphosphataemia.

Rifampicin and isoniazid
Rifampicin may also reduce the effectiveness of vitamin D_3 due to hepatic enzyme induction.

Isoniazid may reduce the effectiveness of vitamin D_3 due to inhibition of the metabolic activation of vitamin D_3.

4.6 Fertility, pregnancy and lactation

Products containing up to 4 000 IU cholecalciferol per capsule

Pregnancy

There are limited data from the use of cholecalciferol in pregnant women. Vitamin D deficiency is harmful for mother and child. High doses of vitamin D have been shown to have teratogenic effects in animal experiments (see section 5.3).

Overdose of vitamin D must be avoided during pregnancy, as prolonged hypercalcaemia may lead to physical and mental retardation, supravalvular aortic stenosis and retinopathy of the child.

Where there is a vitamin D deficiency the recommended dose is dependent on national guidelines, however, the maximum recommended dose during pregnancy is 4 000 IU/day vitamin D_3. For treatment during pregnancy at higher doses, <Invented name> is not recommended.

Breastfeeding

Vitamin D_3 and its metabolites are excreted in breast milk. No adverse events have been observed in infants. <Invented name> can be used at the recommended doses during lactation in case of a vitamin D deficiency. This should be considered when giving additional vitamin D to the child.

Fertility

There are no data on the effects of cholecalciferol on fertility. However, normal endogenous levels of vitamin D_3 are not expected to have any adverse effects on fertility.

Products that contain 4 000 IU cholecalciferol or more per capsule

Pregnancy

There are limited data from the use of cholecalciferol in pregnant women. Vitamin D deficiency is harmful for mother and child. High doses of vitamin D have been shown to have teratogenic effects in animal experiments (see section 5.3).

Overdose of Vitamin D must be avoided during pregnancy, as prolonged hypercalcaemia may lead to physical and mental retardation, supravalvular aortic stenosis and retinopathy of the child.

<Invented name> is not recommended during pregnancy.

Breast-feeding

Vitamin D_3 and its metabolites are excreted in breast milk. No adverse events have been observed in infants. <Invented name> can be used at recommended doses during lactation in case of a vitamin D deficiency. This should be considered when giving extra vitamin D to the child.

Fertility

There are no data on the effect of cholecalciferol on fertility. However, normal endogenous levels of vitamin D are not expected to have any adverse reactions on fertility.

4.7 Effects on ability to drive and use machines

<Invented name> has no or negligible influence on the ability to drive and use machines.

4.8 Undesirable effects

Adverse reactions are listed below, by system/organ class and frequency. Frequencies are defined as: Very common (≥ 1/10), common (≥ 1/100 to < 1/10), uncommon (≥ 1/1 000 to < 1/100), rare (≥ 1/10 000 to < 1/1 000), very rare (< 1/10 000) and not known (cannot be estimated from the available data).

The side effects are a result of overdose.

Immune system disorders
Not known (cannot be estimated from the available data): hypersensitivity reactions such as angioedema or laryngeal oedema.

Metabolism and nutrition disorders
Uncommon: hypercalcaemia and hypercalciuria.

Gastrointestinal disorders
Not known: constipation, flatulence, nausea, abdominal pain, diarrhoea.

Skin and subcutaneous tissue disorders
Rare: pruritus, skin rash and urticaria.

Hypercalcaemia
Depending on the dose and duration of treatment, severe and prolonged hypercalcaemia with its acute (cardiac arrhythmias, nausea, vomiting, psychiatric symptoms, disturbances of consciousness) and chronic (increased urination, increased thirst, loss of appetite, weight loss, kidney stones, kidney calcification, calcification in tissues outside the skeleton) consequences can occur. A fatal outcome has been reported in very rare cases (see also section 4.4, 4.5 and 4.9).

Reporting of suspected adverse reactions
Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V.

4.9 Overdose

Symptoms of overdose

Overdose leads to an increase in serum and urinary phosphorus levels, as well as hypercalcaemia and consequently calcium deposits in the tissues and above all in the kidneys (nephrolithiasis, nephrocalcinosis) and the blood vessels.

The symptoms of intoxication are little characteristic and manifest as nausea, vomiting, diarrhoea often in the early stages and later constipation, loss of appetite, headache, muscle and joint pain, muscle weakness, fatigue, polydipsia, polyuria and in the final stage dehydration. Typical biochemical findings include hypercalcaemia, hypercalciuria as well as increased serum 25-hydroxycholecalciferol concentrations.

Treatment of overdose

Symptoms of chronic vitamin D_3 overdosage may require forced diuresis as well as administration of glucocorticoids or calcitonin.

Overdosage requires measures for treating the - often persisting and under certain circumstances life-threatening - hypercalcemia. The first measurement is to discontinue the vitamin D_3 preparation (and calcium supplements); it takes several weeks to normalize hypercalcaemia caused by vitamin D_3 intoxication. Depending on the degree of hypercalcaemia, measures include a diet that is low in calcium or free of calcium, administration of oral or intravenous fluids, increase of urinary excretion by means of drug furosemide, as well as administration of glucocorticoids and calcitonin.

No special antidote exists.

It is recommended to point out the symptoms of potential overdose to patients under chronic therapy with higher doses of vitamin D_3.

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Vitamin D and analogues, cholecalciferol, ATC code: A11CC05

Cholecalciferol (vitamin D_3) is formed in the skin on exposure to UVB light and converted to its biologically active form, 1,25-dihydroxycholecalciferol, in two hydroxylation steps, first in the liver (position 25) and then in the renal tissue (position 1). Together with parathormone and calcitonin, 1,25-dihydroxycholecalciferol has a considerable impact on the regulation of calcium and phosphate metabolism. In vitamin D_3 deficiency the bones do not calcify (resulting in rickets) or decalcification of bones occurs (resulting in osteomalacia).

According to production, physiological regulation and mechanism of action, vitamin D_3 is to be considered as precursor of a steroid hormone. In addition to physiological production in the skin, cholecalciferol can be supplied via the diet or in the form of a drug. Since in the latter case the product inhibition of cutaneous vitamin D3 synthesis is circumvented, overdose and intoxications may occur. Ergocalciferol (vitamin D_2) is synthesised by plants. Human beings it is activated metabolically in the same way as cholecalciferol. It has the same qualitative and quantitative effects.

Fish liver oil and fish are particularly rich in vitamin D_3; small amounts are found in meat, egg yolk, milk, dairy products and avocado.

5.2 Pharmacodynamic properties

Absorption

Cholecalciferol is absorbed up to 80% in the small intestine by passive diffusion after incorporation into mixed micelles. Vitamin D_3 absorption occurs not only by passive diffusion, but involves, at least partly, cholesterol transporters. Fat-soluble vitamin D_3 is absorbed through the small intestine in the presence of bile acids with the help of micelle formation and gets into the blood through lymphatic circulation. Taking vitamin D_3 with the main meal of the day should therefore facilitate uptake.

Distribution

Following absorption, vitamin D_3 enters the blood as part of chylomicrons and then associate mainly with a specific α-globulin. Vitamin D_3 is rapidly distributed mostly to the liver where it is undergoes metabolism to 25-hydroxyvitamin D_3, the major storage form. Lesser amounts are distributed to adipose and tissue and stored as vitamin D_3 at these sites for later release into the circulation.

Biotransformation

Cholecalciferol is rapidly metabolised by hydroxylation in the liver to 25-hydroxyvitamin D_3 and subsequently metabolized in the kidney to 1,25-dihydroxyvitamin D_3, which represents the biologically active form. Further hydroxylation occurs prior to elimination. A small percentage of vitamin D_3 undergoes glucuronidation prior to elimination.

After a single oral dose of cholecalciferol, the maximum serum concentrations of the primary storage forms are reached after approximately 7 days. 25(OH)D3 is then slowly eliminated with an apparent half-life in serum of about 50 days. Cholecalciferol and its metabolites are excreted mainly in the bile and faeces.

Elimination

Vitamin D_3 and its metabolites are excreted predominantly in the bile and feces and only to a slight extent via urine. They undergo extensive enterohepatic recirculation.

5.3 Preclinical safety data

At doses far higher than the human therapeutic range teratogenicity has been observed in animal studies. No other relevant data is available that has not been mentioned elsewhere in the SmPC (see section 4.6 and 4.9).

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

<Invented name> 800 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C Brilliant Blue FCF (E133)
Water, purified

<Invented name> 5 600 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine 180 Bloom (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C Brilliant Blue FCF (E133)
Water, purified

<Invented name> 10 000 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C No. 3, Erythrosine (E127)
Water, purified

<Invented name> 11 200 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine 180 Bloom (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C Brilliant Blue FCF (E133)
FD&C No. 3, Erythrosine (E127)
Water, purified

<Invented name> 20 000 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C No. 3, Erythrosine (E127)
Water, purified

<Invented name> 25 000 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C Brilliant Blue FCF (E133)
FD&C No. 3, Erythrosine (E127)
Water, purified

<Invented name> 50 000 IU soft capsules
Capsule content
Triglycerides, medium chain
Butylhydroxyanisole (E320)
Butylhydroxytoluene (E321)

Capsule shell
Gelatine (E441)
Glycerol (E422)
Sorbitol, liquid, partially dehydrated
FD&C Brilliant Blue FCF (E133)
Water, purified

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

3 years

6.4 Special precautions for storage

Do not store above 25°C and store in the original package in order to protect from light.

6.5 Nature and contents of container

<Invented name> 800 IU soft capsules: 28, 30, 50, 90 and 250 soft capsules.
<Invented name> 5 600 IU soft capsules: 4, 8 and 12 soft capsules.
<Invented name> 10 000 IU soft capsules: 10 soft capsules.
<Invented name> 11 200 IU soft capsules: 2, 4 and 6 soft capsules.
<Invented name> 20 000 IU soft capsules: 1, 6 and 50 soft capsules.
<Invented name> 25 000 IU soft capsules: 4 soft capsules.
<Invented name> 50 000 IU soft capsules: 2 soft capsules.

The soft capsules are packed in white opaque PVC/PVDC/Aluminium blisters.

Not all pack sizes may be marketed.

6.6 Special precautions for disposal and other handling

No special requirements.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

7. MARKETING AUTHORISATION HOLDER

Wörwag Pharma GmbH & Co. KG
Flugfeld-Allee 24
71034 Böblingen
Duitsland

8. MARKETING AUTHORISATION NUMBERS

RVG 132756 Cholecalciferol Wörwag Pharma 800 IE, zachte capsules
RVG 132757 Cholecalciferol Wörwag Pharma 5.600 IE, zachte capsules
RVG 132758 Cholecalciferol Wörwag Pharma 10.000 IE, zachte capsules
RVG 132759 Cholecalciferol Wörwag Pharma 11.200 IE, zachte capsules
RVG 132760 Cholecalciferol Wörwag Pharma 20.000 IE, zachte capsules
RVG 132761 Cholecalciferol Wörwag Pharma 25.000 IE, zachte capsules
RVG 132762 Cholecalciferol Wörwag Pharma 50.000 IE, zachte capsules

9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

Datum van eerste verlening van de vergunning: 24 januari 2024

10. DATE OF REVISION OF THE TEXT

Laatste gedeeltelijke wijziging betreft de rubrieken 1 en 7: 10 juli 2025