

Reducing Costs through the Use of Antihomotoxic Medications in Treating the Common Cold

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Abstract

In Germany, huge quantities of analgesics, expectorants, antitussives, decongestants, and cold-and-flu medications are used each year in treating fever and other symptoms of the common cold. The choice of active ingredients includes chemical agents, phytotherapeutics, and antihomotoxic preparations.

This study compares the package sizes, daily dosages, and the daily dosage costs of the most commonly prescribed medications. There are distinct differences in price between single medications and combinations. In addition, there are interesting differences in price structure between conventional medicines, phytotherapeutics, and antihomotoxic preparations. Cost-effective treatment with homeopathic combinations is possible.

Resumen

En Alemania, cada año se usan cantidades enormes de analgésicas, expectorantes, antitusivos, descongestivos, y medicamentos contra la fiebre y otras síntomas del resfriado y la gripe. Entre aquellos medicamentos hay agentes químicos, fitoterapéuticos, y preparaciones antihomotóxicas.

Este estudio compare los tamaños de envase, las posologías, y el costo diario de cada uno de los medicamentos más prescritos. Existen diferencias distintas con respecto al precio entre

medicamentos sencillos y combinaciones. Además, hay diferencias interesantes en la estructura de precios entre medicamentos convencionales, fitoterapéuticos, y preparaciones antihomotóxicas. Tratamientos efectivos y más económicos con combinaciones homeopáticas son posibles.

Introduction

Common colds constitute the most common illness during the colder parts of the year. They are triggered by infections caused by RS (respiratory syncytial) viruses and influenza and parainfluenza viruses. During close contact with other

Type	# Prescriptions (in millions)	Sales (in millions of DM)
Analgesics	116.1	1,937.2
Antitussives/expectorants	82.5	1,154.8

Tab. 1: Number of prescriptions and sales of the most frequently prescribed medications for the year 1995¹

	DDD (in millions)	Cost per DDD in DM (and US \$)
non-opioid single drugs		
salicylates	167.5	0.29 (\$0.17)
acetaminophen	83.7	0.69 (\$0.41)
pyrazolone derivatives	56.3	0.93 (\$0.55)
other analgesics	1.5	4.21 (\$2.48)
	309.0	Ø 1.53 (\$0.90)
non-opioid combinations		
with salicylates	4.4	0.50 (\$0.29)
with acetaminophen	1.0	1.05 (\$0.62)
with pyrazolone derivatives	2.9	1.40 (\$0.82)
	8.3	Ø 0.98 (\$0.58)
opioid single drugs		
tramadol	34.7	4.62 (\$2.71)
other opioids	9.9	6.81 (\$4.01)
	44.6	Ø 5.72 (\$3.36)
opioid combinations		
with tilidine	34.7	5.38 (\$3.16)
codeine with acetaminophen	14.9	1.73 (\$1.01)
	49.6	Ø 3.55 (\$2.09)

Tab. 2: Analgesic prescriptions and costs for the year 1995¹; DDD = defined daily dose(s)

people, the illness is transmitted via airborne droplets of nasal and throat secretions. Overheated indoor air (which dries out the mucosae of the nose and throat) is a factor in promoting transmission. Symptoms include fever, headache, aching limbs, dry hacking cough, rhinitis with runny nose and sneezing, and general malaise.

There is no effective means of treating the cause of the illness. Symptomatic therapy includes reducing fever through the use of antipyretics, relieving the cough with antitussives or expectorants and the sneezing with nasal sprays or drops, and alleviating headache and muscle aches.

Allopathic medicine prescribes analgesics (also useful for reducing fever) for the common cold. Acetylsalicylic acid has a reputation as a good pain reliever; higher dosages also have an anti-inflammatory effect. It is seldom used for children because of the risk of developing Reye's syndrome as a side effect. Acetaminophen, although a liver toxin, is frequently used in treating feverish conditions in pediatric patients. As a general rule, aminopyrine should be used only with extreme caution because taking it can lead to sensitization resulting in agranulocytosis and shock.

Costs of analgesics, antipyretics, and antitussives

In 1995, expenses incurred for medications accounted for 17.8 of the 228 billion DM (or 7.8%) of health insurance benefits mandated by German law. The fixed allowances introduced in 1991 have allowed insurers to achieve considerable savings. In 1991 these savings amounted to 0.9 billion DM, while in 1995 they were 2.0 billion DM. Regulations mandating patient copayments of DM 4 (\$2.35) for small packages of medication, DM 6 (\$3.53) for medium-sized packages, and DM 8 (\$4.71) for large packs brought additional relief.

For years, pain relievers and cough medicines have been the top two types of medications prescribed. Together they accounted for nearly 200 million prescriptions and over DM 3 million in sales in 1995 (Table 1).

	Normal dosage	Acute dosage	Cost per DDD in DM (and US \$)
Atropinum compositum S (supp.)	2-3	6	1.36-2.05 (\$0.80-\$1.21)
Belladonna-Homaccord® (drops)	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.42)
Berberis-Homaccord® (drops)	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.42)
Bryaconeel (tablets)	3	6	0.42-0.84 (\$0.25-\$0.50)
Colocynthis-Homaccord® (drops)	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.42)
Gelsemium-Homaccord® (drops)	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.42)
Spascupreel® (tablets)	3	6	0.42-0.84 (\$0.25-\$0.50)
Spigelon® (drops)	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.42)
			Ø 0.49-0.90 (\$0.29-\$0.53)

Tab. 3: Antihomotoxic combination preparations with analgesic activity. Composition of the preparations: *Atropinum compositum*: Bryonia, Cuprum aceticum, Berberis, Pareira brava, Colocynthis, Veratrum, Acidum arsenicosum, Baptisia, Chelidonium, Cambaris, Medorrhinum, Thuja, Clematis, Acidum benzoicum, Argentum nitricum, Atropinum sulfuricum; *Belladonna-Homaccord®*: Belladonna, Echinacea angustifolia; *Berberis-Homaccord®*: Berberis, Colocynthis, Veratrum; *Bryaconeel*: Bryonia, Aconitum, Phosphorus; *Colocynthis-Homaccord®*: Colocynthis, Gnaphalium polycephalum; *Gelsemium-Homaccord®*: Gelsemium, Rhus toxicodendron, Cimicifuga; *Spascupreel®*: Colocynthis, Ammonium bromatum, Atropinum sulfuricum, Veratrum, Magnesium phosphoricum, Gelsemium, Passiflora incarnata, Agaricus, Chamomilla, Cuprum sulfuricum, Aconitum; *Spigelon®*: Spigelia, Belladonna, Bryonia, Gelsemium, Melissus officinalis, Natrum carbonicum, Acidum silicicum, Thuja. DDD = defined daily dose

Preparation	# Prescription (thousands)	Sales (in thous. DM)	DDD (thous.)	Cost per DDD in DM (and US \$)
Traumeel® S	460.8	6,967.1	9,301.3	0.75 (\$0.44)
Viburcol®	446.9	3,246.8	2,196.0	1.47 (\$0.86)
Gripp-Heel®	115.6	867.4	1,474.4	0.59 (\$0.35)
	1,023.3	11,081.3	12,971.7	Ø 0.94 (\$0.55)

Tab. 4: Preparations for general antihomotoxic therapy of feverish conditions. Data are for the year 1995. Composition of the preparations: *Traumeel®*: Arnica, Calendula, Hamamelis, Millefolium, Belladonna, Aconitum, Mercurius solubilis Hahnemanni, Hepar sulfuris, Chamomilla, Symphytum, Bellis perennis, Echinacea angustifolia, Echinacea purpurea, Hypericum; *Viburcol®*: Chamomilla, Belladonna, Dulcamara, Plantago major, Pulsatilla, Calcium carbonicum Hahnemanni; *Gripp-Heel®*: Aconitum, Bryonia, Lachesis, Eupatorium perfoliatum, Phosphorus. DDD = defined daily dose(s).

Preparation	Normal dosage	Acute dosage	Cost per DDD in DM (and US \$)
Aconitum-Homaccord®: fever, respiratory inflammation	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.41)
Apis-Homaccord®: general inflammation	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.41)
Belladonna-Homaccord®: localized inflammation	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.41)
China-Homaccord® S: fever, headache	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.41)
Lymphomyosol®: swollen glands	1 ml	2 ml	0.35-0.70 (\$0.21-\$0.41)

Tab. 5: Symptomatic antihomotoxic therapy for feverish conditions. Data are for the year 1995. Composition of the preparations: *Aconitum-Homaccord®*: Aconitum, Eucalyptus, Ipecacuanba; *Apis-Homaccord®*: Apis mellifica, Apisimum, Scilla, Tartarus stibiatus; *Belladonna-Homaccord®*: Belladonna, Echinacea angustifolia; *China-Homaccord®*: China, Sepia; *Lymphomyosol®*: Myosotis arvensis, Veronica officinalis, Teucrium scorodonia, Pinus silvestris, Gentiana lutea, Equisetum hiemale, Sarsaparilla, Scrophularia nodosa, Juglans, Calcium phosphoricum, Natrum sulfuricum, Fumaria officinalis, Levothyroxin, Aranea diadema, Geranium robertianum, Nasturtium aquaticum, Ferrum jodatum. DDD = defined daily dose

	DDD (in millions)	Cost per DDD in DM (and US \$)
Antitussives: single doses		
Opioids	31.0	2.38 (\$1.40)
Non-opioids	23.7	1.98 (\$1.16)
		Ø 2.18 (1.28)
Antitussives: drug combinations	32.2	1.91 (\$1.12)
Expectorants: single drugs		
Acetylcysteine	282.2	0.95 (\$0.56)
Ambroxol	158.4	0.95 (\$0.56)
Bromhexine	19.5	0.62 (\$0.36)
other	85.1	1.14 (\$0.67)
		Ø 0.91 (\$0.54)
Expectorants: drug combinations		
with anti-infectives	38.2	1.83 (\$1.08)
other	121.7	1.11 (\$0.65)
		Ø 1.47 (\$0.86)

Tab. 6: Antitussives and expectorants prescribed in 1995¹; DDD = defined daily dose(s)

	# Prescription (thousands)	DDD (millions)	Cost per DDD in DM (& US \$)
Antitussives			
Sedotussin [®] (pentoxiverin)	2044.7	11.9	2.31 (\$1.36)
Codipront [®] (codeine)	1776.3	9.3	2.92 (\$1.72)
Capval [®] (noscapine)	634.9	2.4	2.40 (\$1.41)
NeoTussan [®] (dextromethorphan)	179.3	0.4	4.42 (\$2.60)
Silomat [®] (clobutinol)	649.3	2.0	2.71 (\$1.59)
			Ø 2.95 (\$1.74)
Expectorants			
ACC [®] Saft-Hexal (acetylcysteine)	6,987.6	107.9	1.40 (\$0.82)
Mucosolvan [®] (ambroxol)	6,120.3	69.0	1.01 (\$0.59)
Fluimucil [®] (acetylcysteine)	3,561.5	39.5	1.48 (\$0.87)
Bisolvon [®] (bromhexine)	285.0	4.1	0.88 (\$0.52)
Transbronchin [®] (carbocysteine)	167.1	1.4	2.16 (\$1.27)
			Ø 1.39 (\$0.82)

Tab. 7: The antitussives and expectorants most frequently prescribed in 1995¹; DDD = defined daily dose(s)

Analgesics

Because they also have an antipyretic effect, analgesics are the type of medication most frequently used in treating feverish illnesses. Most frequently prescribed are the salicylates, which also have the advantage of being low in cost. Acetaminophen, which is twice as expensive, is used only half as often. Because they are even more expensive, pyrazolone derivatives and other analgesics are prescribed even less frequently. Non-opioid combination medications containing sal-

icylates, acetaminophen, or pyrazolone derivatives are also used less frequently, primarily because their cost is also significantly higher. Opioids are as likely to be prescribed alone as in combinations with tilidine and acetaminophen. The cost of a DDD (defined daily dose) of opioids is 6 to 10 times as high as that of non-opioids (Table 2).

Looking at analgesic antihomotoxic combination preparations, we see that their DDD costs are roughly similar to those of non-opioid single-drug preparations (Table 3).

If antihomotoxic combination preparations are used in treating feverish illnesses, the cost of one day of treatment averages DM 0.94 (\$0.55), less than the cost of non-opioid drug combinations (Table 4).

If the normal dosage is used, there is a distinct price advantage to targeted use of antihomotoxic combination preparations for fever, headache, and general signs of infection, while if the acute dosage is prescribed, the cost for one day of therapy (DDD) is equivalent to that of acetaminophen (Table 5).

Therapy for cough

The tracheitis and bronchitis that develop as a result of the common cold can be relieved symptomatically with antitussives and expectorants. Use of antitussives is justified when the patient is troubled by a hacking cough during the night.

Opioids work directly on the cough center to suppress the cough reflex. Under certain circumstances, dependency, respiratory depression, and inhibition of the mucociliary mechanism may develop as side effects. The most important representatives of the opioids are codeine and dihydrocodeine.

When the cough is productive, expectorants promote the formation of bronchial secretions or loosen mucus; increasing fluid intake and inhaling steam or aerosols also speeds up this process.

Expectorants, in particular, enjoy great popularity among physicians who prescribe them. Preparations containing a single drug constitute 68.6% of prescriptions, while combination expectorants constitute 20.3%. The combined number of prescribed daily doses of these two types of medication amounted to 786 million in 1995.

Antitussives, which account for 11.1% of prescriptions for cough, have not been used as extensively. At DM 2.09, the DDD cost of antitussives (combined figure for single-drug preparations and combinations) is substantially higher than that of expectorants (DM 0.91-1.47=\$0.54 - \$0.86) (Table 6).

	# Rx (thousands)	DDD (millions)	Cost per DDD in DM (& US \$)
Antitussives			
Sinupret® (primula)	4,033.6	53.8	0.97 (\$0.57)
Gelomyrtol® (myrtol)	3,229.2	53.8	0.90 (\$0.53)
Prospan® (ivy)	1,885.1	14.0	1.76 (\$1.04)
Bronchicum-Elixir® (plantain)	520.5	4.9	0.82 (\$0.48)
Tussamag Cough Syrup N (thyme)	259.9	4.7	0.52 (\$0.31)
Soledum® (eucalyptol)	368.0	3.2	1.45 (\$0.85)
Thymipin N® (thymian)	284.4	1.5	2.15 (\$1.26)
Bronchoforton® (anise)	245.5	2.2	0.69 (\$0.41)
Soledum® juice (thymian)	368.1	2.0	2.19 (\$1.29)
Isla-Moos® (Icelandic moss)	161.2	1.2	1.13 (\$0.66)
Eucabal® Cough Syrup (plantain)	159.6	0.4	0.21 (\$0.12)
Babix® Inhaler N (eucalyptus)	152.6	9.6	0.15 (\$0.09)
	11,667.7	151.3	∅ 1.08 (\$0.64)

Tab. 8: The 12 plant-based expectorants most frequently prescribed in 1995

	Normal dosage	Acute dosage	Cost per DDD in DM (and US \$)
Belladonna-Homaccord® (drops)	30	60	0.28-0.56 (\$0.16-\$0.33)
Bronchalis-Heel® (tablets)	3	8	0.28-0.75 (\$0.16-\$0.44)
Husteel® (drops)	30	60	0.28-0.56 (\$0.16-\$0.33)
Droperiteel® (tablets)	3	8	0.28-0.75 (\$0.16-\$0.44)
Drosera-Homaccord® (drops)	30	60	0.28-0.56 (\$0.16-\$0.33)

Tab. 9: Antihomotoxic therapy for cough. Composition of the antihomotoxic antitussives:
Belladonna-Homaccord®: Belladonna, Echinacea angustifolia; **Bronchalis-Heel®**:
 Belladonna, Sticta, Tartarus stibiatus, Kreosotum, Ipecacuanha, Lobelia inflata,
 Hyoscyamus, Bryonia; **Husteel®**: Arsenum iodatum, Belladonna, Scilla, Cuprum aceticum,
 Causticum Habnemannii; **Droperiteel®**: Drosera, Lachesis, Carbo vegetabilis, Coccus cacti,
 Kalium carbonicum; **Drosera-Homaccord®**: Drosera, Cuprum aceticum.

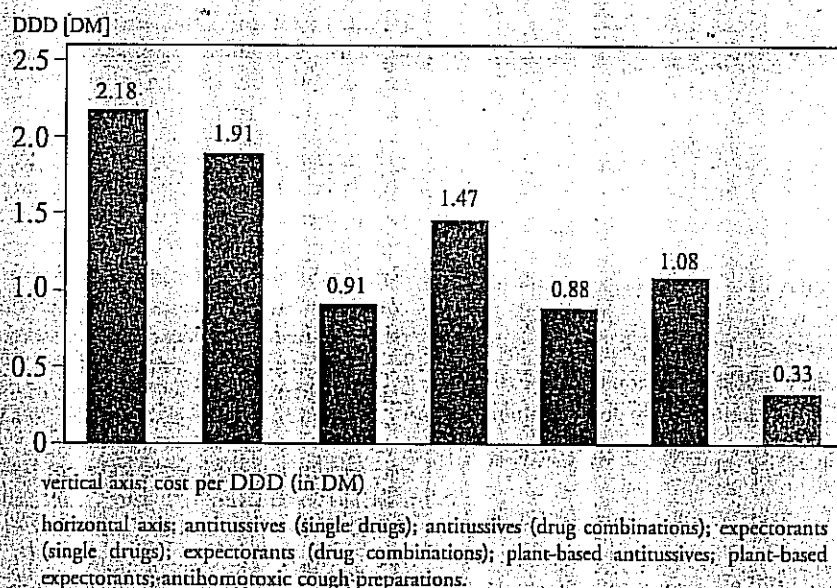


Fig. 1: Relative costs of antitussives and expectorants for 1995. DDD = defined daily dose.

If we select only the most frequently prescribed antitussives and expectorants, we find that their DDD costs are much higher than the average values listed above. Thus the average DDD cost of the most frequently prescribed antitussives is DM 2.95 (\$1.74), while that of the leading expectorants on the market is DM 1.39 (\$0.82) (Table 7).

In 1995, antitussive combinations accounted for a total of 32.2 million prescribed daily doses. The average DDD cost of opioid antitussives in combination with additional chemical drugs (DM 2.25=\$1.32), was higher than that of combinations with plant-based ingredients (DM 0.76=\$0.45).

In 1995, 1.5 million packages of exclusively plant-based antitussives were prescribed, which corresponds to 11.4 million prescribed daily dosages. The average cost per daily dose for preparations made from ivy (Hedera) and sundew (Drosera) was DM 0.88 per day (\$0.52), based on the preparations Hedelix®, Monapax®, and Makatussin.

Table 8 makes it clear that more plant-based expectorants than plant-based antitussives are prescribed. Of the 12 most frequently prescribed preparations, a total of 11.7 million packages containing 151 million daily doses were sold. The average daily cost of the 12 most frequently used preparations amounted to DM 1.08 (\$0.64).

Five combination preparations are available for antihomotoxic treatment of coughs. Even when the normal dose is doubled (acute dose), the cost of a prescribed daily dosage of antihomotoxics (DM 0.28-DM 0.66) is still less than that of their chemical and phytotherapeutic counterparts (Figure 1, Table 9).

Cold and flu medications

Cold and flu medications are also suitable for treating feverish infections. In allopathic medicine, they consist for the most part of combinations of codeine with acetaminophen or acetylsalicylic acid. Here again, it must be pointed out that codeine is a CNS depressant. For this reason, allopathic flu medications are not indicated for productive cough.

	# Prescriptions (thousands)	DDD (millions)	DDD Cost in DM (& US \$)
Gelonida® NA tabl/supp	2,876.4	10.97	1.67 (\$0.98)
Gelonida® NA syrup	359.6	2.25	2.07 (\$1.22)
Treupel® comp.	140.2	0.54	1.19 (\$0.70)
Contraneural® forte	137.2	0.91	1.39 (\$0.82)
Doregrippin®	108.5	0.48	2.11 (\$1.24)
Kontragripp®	111.3	0.56	1.58 (\$0.93)
	3,733.1	15.71	Ø 1.67 (\$0.98)

Tab. 10: Cold-and-flu medications most frequently prescribed in 1995; DDD = defined daily dose(s)

	#Rx (thousands)	DDD (millions)	Cost per DDD in DM (& US \$)
Chemical decongestants			
Olynth®	7,796.6	191.3	0.19 (\$0.11)
Otriven®	2,856.3	67.6	0.20 (\$0.12)
Ratiopharm® nasal spray	2,378.8	58.7	0.18 (\$0.11)
Ratiopharm® nose drops	1,383.6	33.5	0.15 (\$0.09)
Dexa-Rhinospray®	1,074.9	30.7	0.70 (\$0.41)
Nasivin®	888.9	17.1	0.33 (\$0.19)
Ellarun® N	412.8	11.1	0.49 (\$0.29)
	16,791.9	415.0	Ø 0.32 (\$0.19)
Physical and homeopathic decongestants			
Sinuselect® (Cinnabaris, Carbo, Silicea)	283.6	12.6	0.33 (\$0.19)
Emser® Sole (Ems salt)	241.6	0.6	2.87 (\$1.69)
Sinfrontal® (Chininum, Cinnabaris)	213.5	4.5	0.92 (\$0.54)
	738.7	17.1	Ø 1.37 (\$0.81)

Tab. 11: The chemical, physical, and homeopathic decongestants most frequently prescribed in 1995

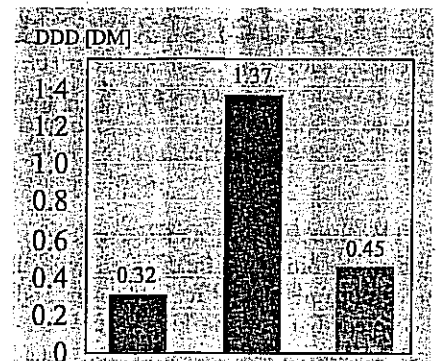
In 1995, 3.7 million prescriptions for this type of medication (or 15.7 million daily dosages) were filled. The cost for one day's treatment averaged DM 1.67 (\$0.98). (Table 10).

Treating the common cold can be significantly more cost-effective if the homeopathic antihomotoxic preparation Gripp-Heel® (ingredients: Aconitum, Bryonia, Lachesis, Eupatorium perfoliatum, Phosphorus) is used: The cost of one day's treatment with this preparation is around DM 0.59 (\$0.35). In 1995, over 115,000 prescriptions (or 1.47 million daily dosages) were filled.

Decongestants

The purpose of decongestants is to relieve nasal congestion and restore nasal breathing. Topical sympathicomimetics reduce swelling of the mucous membranes, keeping the entrances to the paranasal sinuses free and avoiding otitis media by maintaining air movement through the Eustachian tubes. These medications can be used in acute rhinitis in the context of the common cold or allergic rhinitis. Trophic disorders of the nasal mucosae have been described after extended use (more than two weeks).

The fact that chemical decongestants



vertical axis: DM per DDD
horizontal axis: chemical decongestants; physical and homeopathic decongestants; antihomotoxic decongestants

Fig. 2: relative costs of decongestants in 1995; DDD = defined daily dose

rank highest among the leading medications underscores the importance of this type. In 1995 16.8 million packages containing 415 million daily dosages were prescribed. The cost of one day's treatment was around DM 0.32 (Table 11). Other preparations whose mode of action is physical or homeopathic play a secondary role in comparison to chemical decongestants (Table 11).

Three antihomotoxic decongestant preparations are available. They cost only slightly more than their chemical counterparts and significantly less than physical and homeopathic decongestants. They are: Euphorbium compositum® nasal spray at DM 0.56 (\$0.33) per DDD, Naso-Heel® S at DM 0.35 (\$0.21), and Luffa compositum® Heel at DM 0.45 (\$0.26) (Figure 2).

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