Inappropriate Prescrbing of Non-narcotic Analgesics in Taiwan's NHI Ambulatory Visits

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ABSTRACT

***Objectives*: To examine the inappropriate prescribing of non-narcotic analgesics for ambulatory visits under the National Health Insurance (NHI), and to explore the different characteristics of patients and providers in Taiwan.**

***Methods*: A retrospective study was conducted from the national sampling database covering representative ambulatory visits under Taiwan's NHI in 1997. A total of 134,726 prescriptions with non-narcotic analgesics were analyzed. The prescriptions represent 0.2% of the national prescription survey. The inappropriate prescriptions defined in this study are overdosage, duplication regimen, and drug-drug interactions. The characteristics of the patients and providers were also analyzed.**

***Results*: There were 134,726 (39.2%) non-narcotic analgesic prescriptions out of the total 343,482 prescriptions. Among the 134,726 non-narcotic analgesic prescriptions, 6.7% of non-narcotic analgesic prescriptions had overdosage problems, and 14.0% had drug-drug interaction problems. 6.3% of prescriptions with non-steroidal anti-inflammatory drugs (NSAIDs) had duplication regimen problems. Female patients with genital or gandises eases had the highest odds ratio (OR) of 2.60 (95% confidence interval [CI], 2.26-2.99, reference group: upper respiration tract diseases) in overdosage prescriptions. Regarding the duplication regimen, patients with musculoskeletal system and connective tissue diseases had the highest OR of 5.12 (95% CI, 4.69-5.59, reference group: upper respiratory tract diseases). Hypertensive patients had the highest OR of 7.11 (95% CI, 6.59-7.67, reference group: upper respiration tract diseases) on drug-drug interaction problems.**

***Conclusions*: A substantial proportion of non-narcotic analgesic prescriptions in Taiwan were identified to be inappropriate, and patients are subject to various risks. Medical practitioners should be aware of such potential risks. Further research and action should also be taken for improvement.**

Key words: Non-narcotic analgesics; Non-steroidal anti-inflammatory drugs; Prescription; Prescribing problems.

INTRODUCTION

Non-narcotic analgesics include nonsteroidal anti-inflammatory drugs (NSAIDs), miscellaneous analgesics and antipyretics, such as acetaminophen, salicylamide and sodium thiosalicylate. Non-narcotic analgesics, especially NSAIDs, are among the most prescribed medicines today. One to two percentage of the European and US populations take NSAIDs daily, and drug complications such as analgesic nephropathy continues to be a highly prevalent renal disease in a number of European countries.[1,2,3] An increase of 46% budget was required in order to cover the costs of the complications caused by NSAIDs for arthritis treatment.[4] In addition, NSAID-related deaths among arthritis patients was the 15th most common cause of death in the United States in 1997.[5] Some factors that may increase the risk of NSAID-associated gastrointestinal toxicity include: advanced age,[6-11] higher NSAID dosage,[6,12,13] use of multiple NSAIDs and concomitant corticosteroids or anticoagulants use.[10,11,13-15]

However, the relationship between the prescribing problems and their associated factors has only been examined in a few studies. The objectives of our research were to analyze the inappropriate prescriptions of non-narcotic analgesics among different patients and providers in Taiwan's mandatory NHI system.

METHODS

Data Source and Processing

Nearly 96% of Taiwan's 23 million population have been covered by NHI since March 1st, 1995. The study was based on a systematic random sampling set of the NHI Claim Database of ambulatory care cases in 1997, which was obtained from Taiwan's National Health Research Institutes (NHRI). The database included the "Ambulatory Care Expenditures by Visits File" (CD1997) and the "Details of Ambulatory Care Orders File" (OO1997) from January 1st to December 31st, 1997. The sampling database of CD1997 represented 0.2% of the entire database. Other data files used in this study were the "Registry for Contracted Medical Facilities File" (HOSB1997) and the "Drugs Data File" from the NHI Bureau.

The data from HOSB1997 were of provider types, ownership and locale. In this study we analyzed all medical provider types including academic medical centers, metropolitan hospitals, local community hospitals, and primary care clinics.

The data from CD1997 contained information about the patients' gender and age, medical department visited, and major diagnosis, while OO1997 included all information on drug utilization.

Major diagnosis was classified and transformed into International Classification of Diseases, Ninth Revision (ICD-9) codes. The non-narcotic analgesic prescriptions were sorted from the database according to the descriptions under each category of the American Hospital Formulary Service Drug Information 99[16] and MICROMEDEX Healthcare Series Intranet Application.[17]

Nearly all prescriptions contain several drug items in a prescription. Some prescriptions may contain only one drug that depended on the actual prescribing of the doctor. This study analyzed the inappropriate prescriptions in terms of overdosage, duplication regimen, and drug-drug interactions. The criteria were first based on the database of MICROMEDEX Healthcare Series Intranet Application and then the criteria were programmed into SAS for Windows to conduct the study.

Overdosage

The overdosage prescriptions referred to the prescriptions having daily dosage of systemic non-

narcotic analgesics that was over its specified upper limit. If the upper limit of the drug daily dosage was specified in the literature,[17] it was adopted as the standard set. In addition, the criteria adopted in dosage for children were the same as those for adults. When the dosage form is prescribed for local use, such as eyes, ears, and nose, etc., its daily dosage was not processed.

Duplication Regimen

The duplication regimen referred to those prescriptions that had equal or more than two systemic and regular NSAIDs prescribed simultaneously. Only the prescriptions for regular users were analyzed for duplication regimen problems. Prescriptions for those who used the drug once immediately (STAT) and those up to the patient to decide whether to use the drug or not (PRN) were excluded.

Drug-Drug Interactions

The drug-drug interactions referred to prescriptions with systemic and regular drugs that might cause major, moderate, or minor drug-drug interactions. The criteria for judging the drug-drug interaction problem were based on the data base of MICROMEDEX. The same criteria were set likewise to judge all possible drugs that might cause major, moderate, and minor interactions by the use of non-narcotic analgesics.

Statistical Analysis

NHRI used the systematic sampling method to randomly sample a representative data base from the entire data base. The size of the subset from each month was determined based on the ratio of the amount of data in each month to that of the entire year. Then the systematic sampling was performed for each month to randomly select a representative subset. This sampling database was obtained by combining the subsets from 12 months. The sampling database of CD1997 was constructed first then the relative observations in OO1997 were drawn out accordingly. The sampling data base of CD1997 was 0.2% of the entire data base, respectively.

In our study, frequencies and percentages were measured to analyze the number of prescriptions of overdose, duplication regimen, and drug-drug interaction problems. Chi-Square test was conducted to see whether the various nominal variables among the study subjects were dependent on or relevant to each other. The multivariate analysis was performed to examine potential risk factors among different hospitals and different patients to the inappropriate prescribing, followed by a stepwise logistic regression, and the odds ratio (OR) and 95% confidence interval were calculated. Thus, three different types of inappropriate prescribing were conducted by three multiple logistic regression models, respectively.

RESULTS

The sampling data base of CD1997 contained 489,636 prescriptions. A total of 146,154 (29.8%) prescriptions were found with incomplete information such as missing data, data errors, key-in errors, etc., and were deleted from the analysis. Although there was statistically significant difference between the groups with and without prescribed drug information across various characteristics of patients and clinics, the valid data still totaled 343,482 (70.2%) of all claim files. This should provide valuable insights into the utilization and inappropriate prescriptions of non-narcotic analgesics in Taiwan's ambulatory care. Of the 343,482 prescriptions, there were 134,726 non-narcotic analgesic prescriptions that represented 39.2% of the total prescriptions. 90,781 (26.4%) of the prescriptions contained NSAIDs.

Three Types of Inappropriate Prescriptions of Non-narcotic Analgesics

1. Overdosage

Among the 134,726 non-narcotic analgesic prescriptions, 122,498 (90.9%) were valid for daily dose analysis. The study results indicated that 8,245 (6.7%) of them had overdosage problems (Table 1 and Table 2).

As to major diagnosis, female genital organ diseases had the highest percentage of overdosage problems (21.8%, $p < .001$). Prescriptions from primary care clinics had a significantly higher percentage of overdosage problems (8.1%, $p < .001$) than did other providers.

2. Duplication Regimen Problems

A total of 90,781 NSAID prescriptions were identified, and 5,723 prescriptions (6.3%) were written with multiple NSAIDs.

As to major diagnosis, nervous system diseases had the highest percentage of duplication regimen problems (10.4%, $p < .001$) when compared with other diagnoses. In addition, prescriptions from primary care clinics had significantly higher (8.0%, $p < .001$) incidence of duplication regimen problems than those prescribed by other providers.

3. Drug-Drug Interaction Problems

Among the 134,726 non-narcotic analgesics prescriptions, 18,819 (14.0%) prescriptions were associated with drug-drug interaction problems: 118 (0.1%) with major drug-drug interactions, 15,281 (11.3%) with moderate, and the remaining 6,470 (4.8%) with minor drug-drug interaction

Table 1. Inappropriate prescriptions among different characteristics of patients

Characteristics of Patients	Overdosage Rx/No. of Non-Narcotic Analgesics Rx[a] (%)	P Value[b]	Duplicate Regimen Rx/No. of NSAIDs Rx (%)	P Value[b]	Drug-Drug Interaction Rx/No. of Non-Narcotic Analgesics Rx (%)	P Value[b]
Overall	8,245/122,498 (6.7)		5,723/90,781 (6.3)		18,819/134,726 (14.0)	
Gender						
Male	3,373/55,612 (6.1)	< .001	2,799/41,571 (6.7)	< .001	8,456/61,332 (13.8)	.05
Female	4,839/66,316 (7.3)		2,905/48,816 (6.0)		10,303/72,785 (14.2)	
Age group (years old)						
≤ 20	1,395/29,114 (4.8)	< .001	1,651/19,513 (8.5)	< .001	2,902/33,773 (8.6)	< .001
21-40	2,695/31,731 (8.5)		1,053/21,166 (5.0)		3,706/33,509 (11.1)	
41-60	2,278/31,217 (7.3)		1,478/24,369 (6.1)		4,975/33,772 (14.7)	
> 60	1,877/30,427 (6.2)		1,541/25,729 (6.0)		7,235/33,662 (21.5)	
Major Diagnosis						
Upper Respiratory Tract Disease	2,518/45,999 (5.5)	< .001	1,793/28,513 (6.3)	< .001	4,461/50,025 (8.9)	< .001
Nervous System Disease	404/4,361 (9.3)		394/3,808 (10.4)		848/4,726 (17.9)	
Hypertensive Disease	116/3,901 (3.0)		121/3,258 (3.7)		2,167/4,264 (50.8)	
Female Genital Organs Disease	868/3,989 (21.8)		147/3,068 (4.8)		861/4,101 (21.0)	
Medical Department						
Family Medicine	933/11,715 (8.0)	< .001	532/8,289 (6.4)	< .001	1,792/12,691 (14.1)	< .001
Obs/Gyn	1,171/6,293 (18.6)		194/4,322 (4.5)		1,205/6,449 (18.7)	
Pediatrics	176/5,124 (3.4)		353/4,143 (8.5)		440/6,811 (6.5)	
General	2,309/30,520 (7.6)		1,871/22,004 (8.5)		4,087/32,816 (12.5)	
Neurology	74/2,257 (3.3)		113/2,141 (5.3)		913/2,524 (36.2)	

[a] The prescriptions with non-narcotic analgesics were readable for daily dose. [b] P value is based on X^2 test.

Table 2. Inappropriate prescriptions among different characteristics of hospitals[a]

Characteristics of Hospitals	Overdosage Rx/Non-Narcotic Analgesics Rx[a] (%)	P Value[b]	Duplication Regimen Rx/ NSAIDs Rx (%)	P Value[b]	Drug-drug Interactions Rx/No. of Non-Narcotic Analgesics Rx (%)	P Value[b]
Overall	8,245/122,498 (6.7)		5,723/90,781 (6.3)		18,819/134,726 (14.0)	
Type of Providers						
Academic Med Center	231/8,064 (2.9)	< .001	197/6,803 (2.9)	< .001	1,989/9,544 (20.8)	< .001
Metropolitan Hospital	282/10,385 (2.7)		264/8,324 (3.2)		2,190/12,052 (18.2)	
Local Community Hospital	1,877/31,616 (5.9)		1,226/25,401 (4.8)		4,634/35,265 (13.1)	
Primary Care Clinic	5,855/72,433 (8.1)		4,036/50,253 (8.0)		10,006/77,865 (12.9)	
Ownership of Providers[c]						
Public Hospital	206/8,008 (2.6)	< .001	189/6,741 (2.8)	< .001	1,817/9,404 (19.3)	< .001
Hospital Locale[c]						
Taipei	1,532/24,985 (6.1)	< .001	1,066/18,475 (5.8)	< .001	3,856/27,598 (14.0)	< .001

[a] The prescriptions with non-narcotic analgesics were readable for daily dose.
[b] P value is based on X^2 test.
[c] Ownership of providers included public hospital, public clinic, private hospital, private clinic. Hospital locale included hospitals located in Taipei, the Northern, Southern, Central, Kao-ping, and the Eastern regions of NHIB branch offices. The data in the table does not show results with no statistical significance.

problems.

Those who were over 60 years old had the highest percentage of drug-drug interaction problems (21.5%, $p < .001$). When this problem was examined by medical departments visited, the neurological department had the highest percentage (36.2%, $p < .001$). Hypertensive patients had the highest percentage of drug-drug interaction problems (50.8%, $p < .001$) when compared with other diseases. In addition, the drug-drug interaction problems in academic medical centers were significantly higher (20.8%, $p < .001$) than in any other providers.

Multiple Stepwise Logistic Regression Analysis for Inappropriate Prescriptions

Multiple stepwise logistic regression was applied to determine the odds ratios of inappropriate prescriptions among the different patients and providers. Three models were used with the same reference groups: male, 20 years old and less, the family medicine department, upper respiration tract diseases, academic medical centers, public hospitals, and the Taipei areas (Table 3).

Model One explored the relationships across different characteristics of patients and providers in overdosage prescriptions. We found that female genital or gandisease has the highest OR of 2.60 (95% CI, 2.26-2.99; $p < .001$) among major diagnoses. Primary care clinics had the highest OR of 2.02 (95% CI, 1.60-2.54; $p < .001$) among different types of providers.

Model Two explored the relationship across different characteristics of patients and providers in duplication regimens. Musculoskeletal system and connective tissue diseases had the highest OR of 5.12 (95% CI, 4.69-5.59; $p < .001$) among major diagnosis. The primary care clinic was the highest provider type with OR of 3.36 (95% CI, 2.60-4.33; $p < .001$).

Model Three explored the relationship across different characteristics of patients and providers in the drug-drug interaction prescriptions. Those who were over 60 years old had the highest OR of 1.76

Table 3. Factors associated with inappropriate prescriptions using three multiple logistic regression models[a]

Characteristics	Overdosage OR (95% CI)	P Value	Duplication Regimen OR (95% CI)	P Value	Drug-Drug Interaction OR (95% CI)	P Value
Gender						
Female	0.96 (0.92-1.01)		0.86 (0.81-0.91)	< .001	0.99 (0.95-1.02)	
Age group (y)						
21-40	1.46 (1.36-1.57)	< .001	0.57 (0.52-0.62)	< .001	1.02 (0.97-1.08)	< .001
41-60	1.38 (1.28-1.49)	< .001	0.65 (0.60-0.71)	< .001	1.28 (1.21-1.35)	.40
> 60	1.32 (1.22-1.43)	< .001	0.67 (0.61-0.73)	< .001	1.76 (1.67-1.86)	< .001
Medical Department						
Gyn/Obs	1.75 (1.53-2.01)	< .001	0.82 (0.64-1.05)	.11	1.22 (1.09-1.37)	< .001
Pediatrics	0.70 (0.59-0.82)	< .001	1.66 (1.43-1.93)	< .001	0.72 (0.64-0.81)	< .001
Neurology	0.55 (0.43-0.71)	< .001	1.27 (1.02-1.59)	.03	2.25 (2.03-2.50)	< .001
Major Diagnosis						
Hypertensive Disease	0.84 (0.69-1.02)	.08	1.68 (1.38-2.05)	< .001	7.11 (6.59-7.67)	< .001
Female Genital Organs Disease	2.60 (2.26-2.99)	< .001	2.23 (1.71-2.91)	< .001	2.49 (2.20-2.82)	< .001
Musculoskeletal System/Connective Tissue Disease	2.10 (1.94-2.28)	< .001	5.12 (4.69-5.59)	< .001	1.51 (1.42-1.61)	< .001
Type of Provider						
Primary Care Clinic	2.02 (1.60-2.54)	< .001	3.36 (2.60-4.33)	< .001	1.01 (0.88-1.17)	.86

OR: Odds Ratio; CI: Confidence Interval.

(95% CI, 1.67-1.86; p < .001) among different age groups. As to medical departments, the neurologic department had the highest OR of 2.25 (95% CI, 2.03-2.50; p < .001) against different clinical departments. Regarding major diagnosis, hypertensive diseases had the highest OR of 7.11 (95% CI, 6.59-7.67; p < .001).

When the three types of inappropriate prescriptions were considered together, we found 0.4% of the non-narcotic analgesic prescriptions were simultaneously associated with all three problems. The percentage of the prescriptions that were identified with at least one inappropriate prescription was 19.7%. The drug cost of the inappropriate prescriptions was 11.2% of the total drug cost of prescriptions with written drug information (Table 4).

Table 4. The percentage and the drug cost of inappropriate prescriptions[a]

Type of Inappropriate Prescriptions	Inappropriate Rx No. of Non-Narcotic Analgesics, % (n = 134,726)	Drug Cost of Inappropriate Rx in Total Rx[b], %
1. Overdosage	8,245 (6.1)	1.6
2. Duplication Regimen	5,723 (4.2)	1.4
3. Drug-Drug Interaction	18,819 (14.0)	9.7
Inappropriate Prescriptions 1, 2, and 3	515 (0.4)	0.1
Total	26,588 (19.7)	11.2

[a] 1: Overdosage; 2: Duplication Regimen; 3: Drug-Drug interaction; Rx: Prescriptions.
[b] Total Rx: the prescriptions with prescribed drugs written.

DISCUSSIONS

Most studies on the inappropriate prescriptions focused only on the prescriptions used by certain participants in specific locations.[18] However, the relationship between inappropriate prescribing and their associated factors has not been examined. The database that we used from NHRI was a representative national sample of Taiwan. Our research also explored the inappropriate prescriptions among different patients and providers.

With regard to inappropriate prescribing, this study adopted the viewpoint of Buetow et al. that 'the process' is the key factor to rational prescribing of medication, and when determining whether a prescription is appropriate or not, the outcome is the key factor.[19] Unless the outcome of a prescription and treatment is reviewed, one cannot judge whether the prescription is appropriate or not. Since our study only discussed the reasonableness of the prescriptions, the term 'inappropriate prescribing' may not connote with clinical inappropriateness.

This study adopted a conservative approach when exploring inappropriate prescribing. For example, when identifying the overdosage prescriptions, the upper limit adopted was the maximum daily dosage of the drug according to its diagnosis. Compared with other studies, the high dosage referred to the dosage that was over 120% of the daily average dosage.[20] However, the daily dosage measured in this study was relatively higher. On the other hand, we adopted the adult dosage for the children, this criterion was also higher which may result in an underestimate of the overdose situation among children.

This study found 6.7% of non-narcotic analgesic prescriptions with overdosage. Since increasing NSAID dosages above the average daily dose significantly increases the GI toxicity risk,[20] and serious GI toxicity can occur at any time,[5] we suggest physicians should be more cautious about their dosage when prescribing these drugs.

Regarding the duplication regimen prescriptions, this study adopted a stricter definition, many PRN types of prescriptions were excluded. Unless their medical history records were examined, the prescriptions for PRN were not considered as duplication regimen problems.

This study found 6.3% of NSAID prescriptions with duplication regimen. Another study indicates that use of multiple NSAIDs significantly increased the GI toxicity risk, and it has also become a problem in the United States.[20] Medical practitioners should endeavor to find ways for improvement.

Regarding drug-drug interaction problems, the study by Tamblyn et al. only examined the use of warfarin with NSAIDs.[21] Our study analyzed potentially inappropriate drug-drug interaction associated with non-narcotic analgesics by including all drugs that might cause major, moderate, and minor drug-drug interactions.

Berndt et al. pointed out that the older the patients, the easier that drug-drug interactions may happen when multiple drugs are written in one prescription.[22] This study found that the age group over 60 years old had the highest percentage (21.5%, $p < .001$) of such problems. Therefore, doctors should be more cautious when prescribing for the elderly in order to avoid health hazards to the elderly patients.

As to clinical departments, the neurologic department had the highest percentage (36.2%, $p < .001$) of drug-drug interaction prescriptions. The reason might be attributed to the high percentage of the patients who had strokes and the need of anticoagulants. It is very likely to result in a prescription with a drug-drug interaction problem if the doctor is not aware of the potential risks.

Regarding major diagnosis, patients with hy-

pertensive diseases had the highest percentage (50.8%, $p < .001$) of drug-drug interaction prescriptions. Many non-narcotic analgesics have drug-drug interactions with anti-hypertensive drugs. It was therefore very likely that the doctor prescribed non-narcotic analgesics without full knowledge of such drugs.

The prescriptions that involved three inappropriate prescribing types simultaneously were 0.4% of total non-narcotic analgesic prescriptions. A study to further examine the impact of these prescriptions on patients should be conducted. Regarding cost, the drug cost of the prescriptions that had inappropriate non-narcotic analgesic was over one tenth of total ambulatory care drug cost. If the costs of the complications caused by inappropriate prescriptions were also included, the actual total cost would be more than what was estimated in this study.

Because this study used secondary data for analysis, there were at least two limitations: First, because only 70.2% of the prescriptions had complete information, this study does not constitute a complete national analysis of the inappropriate prescribing of non-narcotic analgesics. Secondly, since this study was based on the data base, it is not feasible to review all medical records to further analyze the patients' outcome.

Therefore, medical history records should be reviewed in the future studies and a more refined standard should be adopted. In addition, this study only analyzed per individual prescriptions, yet some times patients might have more than one prescription at the same time. It is therefore recommended that sorting scrambled patients' ID numbers be adopted in the future in order to understand how the patient used the drugs in mundane reality. As many inappropriate prescriptions existed across different patients and providers, further studies could be conducted to find out the attributes related to these inappropriate prescriptions. The follow-up and evaluation of the consequences, including the impacts, should also be adopted.

Health professionals, especially physicians and pharmacists, should be more alert of the high risk related to these inappropriate prescribing in order to minimize such events.

Lastly, because non-narcotic analgesics have been widely used and involve high complication risks, it is strongly recommended that drug utilization review should be adopted to monitor the use of non-narcotic analgesics in the medical care setting, especially on specific patient groups. Then the quality of the prescriptions can be improved, and the unnecessary medical expenses can be saved.

CONCLUSIONS

This study shows, like western countries, a high proportion (39.2%) of non-narcotic analgesic prescriptions in Taiwan.[23] A substantial proportion of non-narcotic analgesic prescriptions in Taiwan were identified to be inappropriate, and patients are subject to various risks. Owing to some inappropriate prescriptions in our study are with high risk in GI toxicity,[10-15] they may result in more medical needs according to the study about associated complications in USA. The complications caused by these inappropriate prescriptions may result in more medical needs. In the United States, the complications cause a great number of deaths and hospitalizations per year, placing a considerable economic burden on their healthcare system.[20] Medical practitioners should be aware of such potential risks. Further research and action should also be taken for improvement.

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Appendix: Daily maximum dose of non-narcotic analgesic drugs

Drug Composition	Daily Maximum Dose (mg)	Drug Composition	Daily Maximum Dose (mg)
Acemetacin	180	Acetaminophen	4000
Acetyl Salicylate	8000	Aspirin	8000
Acetylsalicylate (Lysine)	10800	Alclofenac	4000
Alminoprofen	900	Aluminum Bis-Acetylsalicylate) (Aluminum Acetylsalicylate)	17840
Avapyrazone	1000	Diclofenac	225
Diclofenac Diethylamine Salt	150	Diclofenac Potassium	225
Diclofenac Sodium	225	Diclofenac Sodium (Diethylammonium)	225
Diflunisal	1500	Dipyrone (Sulpyrin)	1000
Ethenzamide (Ethoxybenzamide)	4000	Fenbufen	1000
Fenoprofen (Calcium)	3200	Flufenamic Acid	750
Flurbiprofen	400	Hydroxybutyric Acid (Beta)	4000
Ibuprofen	3200	Ibuprofen Lysine	5466
Indomethacin	200	Ketoprofen	300
Lysine Acetylsalicylate	10800	Meclofenamate (Sodium Monohydrate)	400
Mefenamic Acid	1000	Mepirizole (Epirizone)	450
Methyl Salicylate	8000	Nabumetone	2000
Naproxen	1250	Naproxen Sodium	1375
Nefopam HCl	300	Niflumic Acid	1000
Phenylbutazone (= Di-Phenylbutazone)	600	Piroxicam	40
Propyphenazone (Isopropyphenazone)	4000	Pyrabital (Aminopyrine+Barbital)	1000
Salicylamide	1500	Salicylate (Choline Magnesium Trisalicylate)	3000
Salsalate (= Sasapyrine)	3000	Sodium Salicylate	3900
Sulindac	400	Tenoxicam	40
Tiaprofenic Acid	600	Tiaramide HCl	300
Tolfenamic Acid	600	Tolmetin (Sodium Dihydrate)	1800
Tolmetin (Sodium)	1800		

Source: Micromedex® Healthcare Series (2000). Englewood: Microdex Inc., (Edition expires 6/2000).