EFFECT OF THALIDOMIDE WARNING ON MEDICINE PRESCRIBED FOR PREGNANT WOMEN

ANALYSIS OF FREE MEDICINES DELIVERED TO EXPECTANT MOTHERS IN THE VÄSTERBOTTEN COUNTY OF SWEDEN DURING 1961 AND 1962

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Official statistical data show that there has been a steady increase in the consumption of medical remedies in Sweden as well as in most other countries. The reasons are many. Higher living standards permit doctors to prescribe better and more effective but inevitably more expensive drugs than previously. Also the newer drugs are often believed to be "wonder-drugs" curing most ailments, and though the doctor may know better his patient will not be pleased unless he receives them.

It appears, therefore, that "crowd behaviour" is an essential factor even in this scientific matter, and an excellent opportunity to study this phenomenon appeared with the thalidomide warning in 1961. In Sweden all expectant mothers are entitled by law to receive certain "preventive remedies" (Table III) paid for by the State. A questionnaire sent to pharmacists in the County of Västerbotten and to the National Medical Board in Sweden revealed that the Swedish government had paid less for such medicines in 1962 than in the previous year. In 1962 the population of Västerbotten was 238,581 persons, the birth rate being fairly constant with 3,460 in 1961 and 3,466 in 1962. Authority to prescribe these remedies lay in the hands of 39 physicians, who during these years worked in the centres of preventive medicine for expectant mothers in Västerbotten.

The decrease in the consumption of free medicines by pregnant women coincided with Lens' finding that thalidomide taken during early pregnancy could have been the cause of a large number of malformed babies, and preparations containing thalidomide were soon forbidden in Sweden. The tragic thalidomide story received great publicity and in November, 1962, doctors were recommended to restrict the

prescription of similar medical remedies to pregnant women.

The following study is an analysis of all the prescriptions of free medicines for pregnant women in the County of Västerbotten in 1961 and 1962. Table I gives the number of prescriptions issued and the number of medicines prescribed for each month. A comparison of the two years as a whole, during which the weather and morbidity rates were similar, eliminated the factor of seasonal variation in the number of prescriptions. The Table shows that 586 fewer prescriptions of this kind were issued in 1962 than in 1961 and that 1,925 fewer packs of medicine were prescribed in 1962. Despite this drop in free medicines the maternal welfare clinics in this county received 407 more visits from expectant mothers in 1962 than in 1961.

TABLE I
FREE MEDICINE GIVEN TO EXPECTANT MOTHERS IN THE
VÄSTERBOTTEN COUNTY EACH MONTH, 1961 AND 1962

Year	1961		1962	
Month	No. of Prescribed Packets of Different Medicines	No. of Prescriptions	No. of Prescribed Packets of Different Medicines	No. of Prescriptions
January	1,645	556	1,392	538
February	1,278	450	1,180	449
March	1,224	450	1,229	493
April	1,093	404	882	368
May	700	303	826	349
June	776	310	734	291
July	846	365	663	265
August	846	345	735	281
September	860	354	795	299
October	1,178	409	958	352
November	1,141	432	627	238
December	1,111	376	752	245
January to December ..	12,698	4,754	10,773	4,168

Table II shows how much the Swedish government paid for medicines for these women in each quarter of 1961 and 1962. There was a decrease in each quarter of 1962, beginning with a 10.8 per cent. drop in the first quarter and ending with a 36.1 per cent. drop in the fourth. The government paid 20.6 per cent. less during 1962 than in 1961.

TABLE II

COST TO THE SWEDISH GOVERNMENT (IN SWEDISH CROWNS) FOR FREE MEDICINES TO EXPECTANT MOTHERS IN THE VÄSTERBOTTEN COUNTY PER QUARTER, 1961 AND 1962

Quarter		1	2	3	4	1-4
Year	1961	13,759	8,919	8,926	11,733	43,337
	1962	12,276	7,718	6,909	7,496	34,399
Reduction in 1962		-1,483	-1,201	-2,018	-4,236	-8,938
Percentage Reduction		-10.8	-13.5	-22.6	-36.1	-20.6

Amounts to the nearest Crown

Table III shows the medicines prescribed during the eight quarters of these two years. The greater part consisted of compounds containing iron: various forms of iron tartrate and iron sulphate, with or without a laxative added. The next most commonly prescribed were different forms of vitamin C (in ascorbic acid tablets), and third in order were calcium phosphate compounds. Up to the first quarter of 1962 the fourth group in order consisted of drugs like atropine sulphate, calcium

silicate with an admixture of belladonna, amobarbital, and phenobarbital with or without an admixture of caffeine. The Table shows that fewer prescriptions were made out in 1962 for almost every sort of medicine.

There were far fewer prescriptions for vitamin A-D and C; the chemists handed out more than 500 less packets of A-D compounds in 1962 than in 1961 and more than 400 less packets of vitamin C compounds. They delivered as many packets of vitamin B in the whole of 1962 as in the whole of 1961, but during the last half of 1962 much less of these vitamins as well.

The chemists also delivered more than 400 fewer packets of iron compounds in 1962 than in 1961.

The expectant mothers also received less calcium silicate and belladonna, less laxatives, and far less "soothing" drugs (atropine sulphate, phenobarbital with and without an admixture of caffeine, and amobarbital).

No boric acid ointment was prescribed in 1962 (as compared with 205 packets in 1961) because this was not included in 1962. This does not affect the general trend found in this study. Generally speaking, the drop in the total series began in the first quarter of 1962, more precisely in the middle of February. The drop in "soothing" medicines and acetylsalicylic acid with or without codeine took place abruptly in the middle of February, after which only two prescriptions were written for these sedatives. The physicians prescribed almost the same number of drugs per prescription for expectant mothers, but

TABLE III

NO. OF PACKETS AND KINDS OF FREE MEDICINES GIVEN TO EXPECTANT MOTHERS IN THE VÄSTERBOTTEN COUNTY EACH QUARTER, 1961 AND 1962

Quarter		1		2		3		4		1-4	
Year		1961	1962	1961	1962	1961	1962	1961	1962	1961	1962
No. of Packets of Medicine	Vitamin A-D	872	782	427	341	412	344	763	505	2,474	1,972
	Vitamin B complex	609	699	378	482	434	392	560	436	1,981	2,009
	Ascorbic acid	671	531	418	354	342	353	590	366	2,021	1,604
	Calcium phosphate	252	240	149	142	130	150	186	138	717	670
	Paraffin emulsion with phenolphthalein	28	5	7	1	10	—	16	—	61	6
	Carlsbad salts	1	4	2	—	2	—	—	—	5	4
	Acetarsone suppositories	9	3	8	1	12	—	5	—	34	4
	Methylrosaline suppositories	1	1	—	1	—	—	—	—	1	2
	Atropine sulphate	4	4	3	—	1	—	4	—	12	4
	Calcium silicate with belladonna	37	33	28	1	31	—	40	—	136	34
	Barbital and caffeine	6	2	1	—	3	—	2	—	12	2
	Iron tartrate and sulphate	365	458	278	505	355	392	363	339	1,361	1,694
	Iron tartrate compounds	244	102	136	4	155	2	111	—	646	108
	Iron tartrate and sulphate plus a laxative	886	860	624	610	595	558	669	553	2,774	2,581
	Hexamethylenetetramine	3	—	—	—	—	—	2	—	5	—
	Acetylsalicylic acid	2	23	—	—	1	—	1	—	4	23
	Acetylsalicylic acid plus codeine	4	5	4	—	2	—	4	—	14	5
	Sodium bicarbonate	31	25	13	—	2	—	23	—	69	25
	Amobarbital	31	15	24	—	16	1	33	1	104	17
	Phenobarbital	19	6	13	—	14	—	9	—	55	6
	Ergot alkaloid compounds	—	1	—	—	1	—	2	—	3	1
	Sulphamethylazole	1	2	—	—	2	—	1	—	4	2
	Boric acid ointment	71	—	56	—	32	—	46	—	205	—
	Total	4,147	3,801	2,569	2,442	2,552	2,192	3,430	2,338	12,698	10,773

they often prescribed smaller quantities of drugs in 1962 than in 1961.

Table IV shows that the physicians were much more cautious about dosage in 1962 than they had been in 1961. There was a statistically significant difference between 1961 and 1962, and far fewer

TABLE IV
MAXIMUM NUMBER OF DOSES (TABLETS OR SPOONFULS PER DAY) IN PRESCRIPTIONS FOR FREE MEDICINE GIVEN EXPECTANT MOTHERS IN THE VASTERBOTTEN COUNTY, 1961 AND 1962

Maximum No. of Doses per Day	Year	
	1961	1962
1	1,165	873
2	2,872	3,035
3	7,228	5,504
4	472	654
5	5	1
6	925	687
7	—	—
8	18	2
9	13	17
Total	12,698	10,773

prescriptions for dosages of five or more pills or spoonfuls per day.

CONCLUSIONS

The government had to pay less for free medicines for maternal welfare in 1962 than in 1961 for the following reasons: (1) The physicians cut down on every kind of medicine in 1962, not only on sedatives and therapeutic drugs, but also on preventive medicine; (2) They prescribed smaller packets of medicine than before and they were more cautious about dosage.

The thalidomide tragedy thus had a distinct effect on the kind and amount of medicine prescribed for expectant mothers. It is not possible to say whether the expectant mothers asked for less medicine than before, or whether more of them did not claim the medicine for which they received prescriptions.

This study indicates that the prescription and use of medical remedies are largely subject to influences other than rational ones, *i.e.* to a kind of "crowd behaviour" on the part of doctors and patients.