

PHARMACOEPIDEMOLOGY - POSITION AND DEVELOPMENT IN BULGARIA

Z.D. DIMITROVA* – K.N. SAMEV – S.I. RADONOVA – M.C. STEFANOVA

SUMMARY

The adverse drug effects (ADE) are one very important social, medical and economic problem. The need of qualitative and quantitative assessment of the unexpected drug effects has led to the establishment of one new discipline - pharmacoepidimiology. It studies the usage of drugs in big populations of people and their effects (beneficial and adverse).

In this paper is illustrated the need of pharmacoepidemiological studies in our country through a discussion of some recent research of drug side effects in three hospitals in Sofia.

KEY WORDS

adverse drug effect, drug injury, ethiological factors: age, sex and etc.

* Faculty of Pharmacy, Department of Organization and Economy of Pharmacy, 2 Dunav Str., 1000 Sofia, BULGARIA.

INTRODUCTION

In accordance with the world statistic the adverse drug effects (ADE) are the reason because of which about 15-30% from the patients treated in a hospital get one or another injury. 10% from the ADE are evaluated as hard and life-dangerous, and the death rate of patients with drug injures is about 2%. (1). All these data show that the ADE are one very important, social, medical and economic problem.

The need of a qualitative and quantitative assessment of the unexpected drug effects has led to the establishment of one new discipline - pharmacoepidimiology. It studies the usage of drugs in big populations of people and their effects (beneficial and adverse). (2)

During 1975 Bulgaria was joined to the Center of WHO for international accounting of the adverse reactions of drugs in Upsula, Sweden. The main task of the National center for the ADE is to collect, frame, keep and send the received from the country announcements for the registered ADE to WHO. The fact that only 20% from the received announcements for ADE during 1993 are send from physicians and the rest 70% are collected from the coordinators of the center shows that the physicians, pharmacists and dentists are poorly informed and have weak activity in giving an information for the ADE.

The main aim of this study is by the methods of the pharmacoepidimiology to analyze the usage of drugs in three university clinics in Sofia and to give quantitative and qualitative assessment of their ADE.

METHODS

1. Retrospective method. It was applied in the both university clinics - toxicological and dermatological on the base of the history of the patient morbidity who has been treated during 1993 in them in connection with the ADE.

2. Prospective method. In the cardiological clinic are observed hospital patients, who has gotten ADE during their treatment.

Nevertheless the differences in the approach for studying the ADE the last are characterized by one and the same indexes in the three university clinics.

RESULTS AND COMMENTS

About 4799 patients were studied and in 245 from them was registered drug injury. The frequency of the hospitalized patients in connection with the ADE in the toxicological clinic is 5,43%, in the dermatological one is 2,12%. The frequency of the ADE in the hospital patients in the last clinic that has appeared during their treatment is 22,34%.

The connection between the drug and its ADE can be surely, possible, probable and unimpossible . The defining of the causal effective connection in the toxicological and dermatological clinics we have made by the help of the algorithm of Lasagna and in the cardiological clinic - the algorithm of Naranjo. (3, 4, 5,).The defining of the causal connection is the most disputable and the most important moment in the process of classifying the ADE. The results of this study made on the basis of this index (shown on fig.1) reveal that in 70% from the occasions with ADE the connection is probable in the three observed clinics and only in 25-30% is sure.

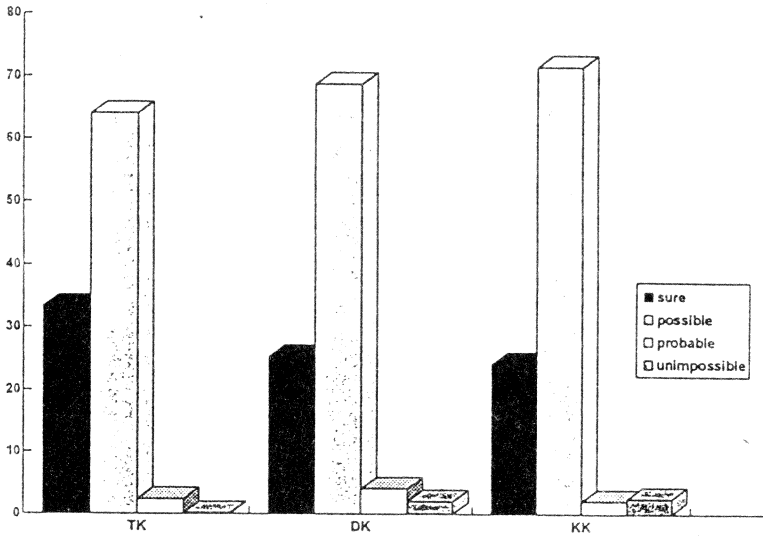


FIG.1 The distribution of the ADE in three clinics according to the category of the causal effective connection

The connection between the drug and the ADE is sure when the ADE is preliminary known, it appears after second use of the drug and can not be explained by the clinical status of the patient.

On fig.2 is given the distribution of the ADE in the three clinics according to the index " heaviness "

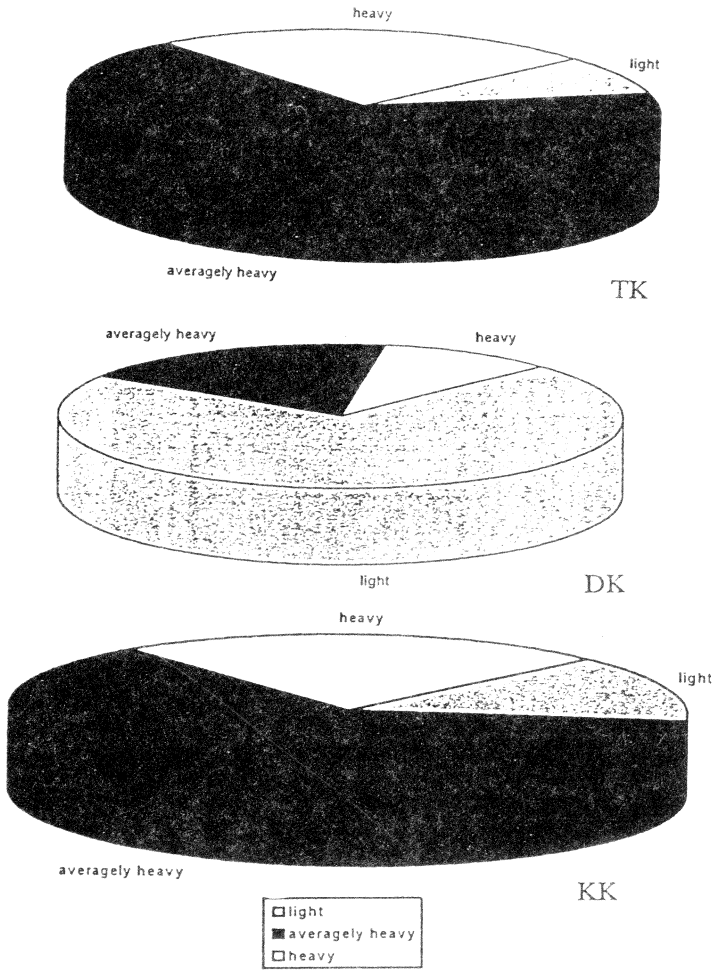


FIG.2 The distribution of the ADE in three clinics according to the index "heaviness".

It is seen that in the toxicological and dermatological clinic predominate ADE with average degree of heaviness and in the cardiological clinic - the light drug injury as headache, nausea, giddiness and others. Although that the percentage of the hard drug effects is comparatively low (in average about 10%) in the toxicological clinic are observed occasions of allergic shock, erithema multiform, in the dermatological clinic - sindrom of Stivens Jonsen, lupus erithematodes and in the cardiological clinic - intoxication with digitalis, AV block and others. If we look at the whole contingent of patients entering the hospital in connection with the ADE in the toxicological clinic the percentage of the heavy drug effect would be much higher because the drug intoxications in the most cases lead to life-dangerous injuries but according to the definition of WHO for ADE they are not a subject of the pharmacoepidimiological investigations.

On fig.3 is presented the distribution of the studied ADE in the two clinics according to the index - way out of the ADE. In the toxicological clinic in the most cases the way out is beneficial.

The recovered patients with consequences are directed to home treatment and these without improvements - to specialized hospitals. In the dermatological clinic in 2/3 from the patients the ADE are difficulty treated and the patients are recovering partially because the skin effects of ADE usually have chronicle character. In the cardiological clinic for 97% in average from the patients the way out is beneficial and they are recovering without consequences.



FIG.3 The distribution of the studied ADE in the two clinics according to the index - way out of the ADE.

On the basis of the ethiological factors influencing the structure and the intensity of the ADE are analyzed the female, the age, the season peculiarities of appearance of ADE and previous oversensitivity. The number of women with ADE is about twice more than the men which can be explained by the more sensibilitiveness of women to the drug therapy. (fig.4)

More intensive manifestation of ADE is observed during the spring and autumn-winter time because of the increased organism sensibilisation and an intensive morbidity of the population. The selfmedication also influences the

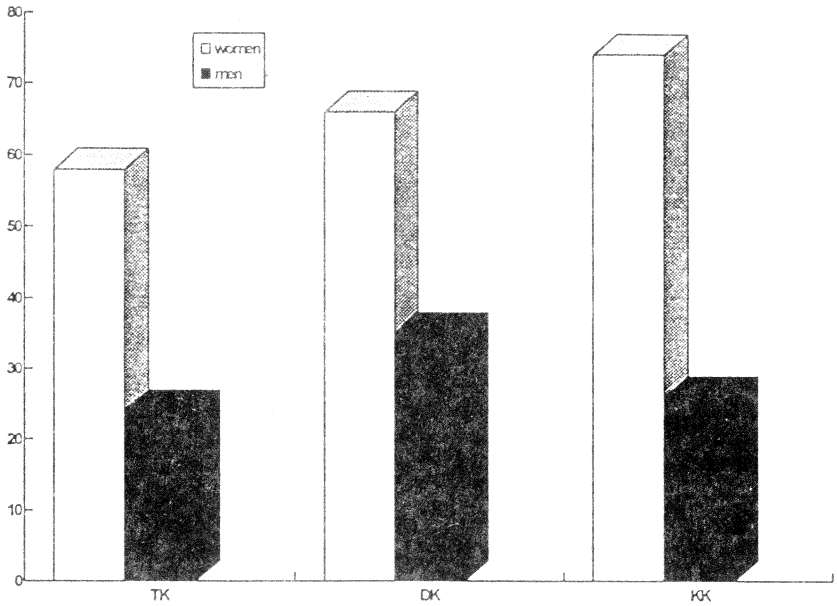


FIG.4 The distribution of the patients according to the sex.

appearance of the ADE. In this study the indiscriminately drug usage without physician's prescription that is observed in the new private pharmacies is a reason for the hospitalization of $1/4$ from the patients with ADE.

The distribution of patients with ADE in the toxicological and dermatological clinics according to the anamnestic data for drug oversensitivity represented on fig. 5 shows that $1/3-1/2$ from the undesired ADE would be prevented on the basis of the anamnestic data.

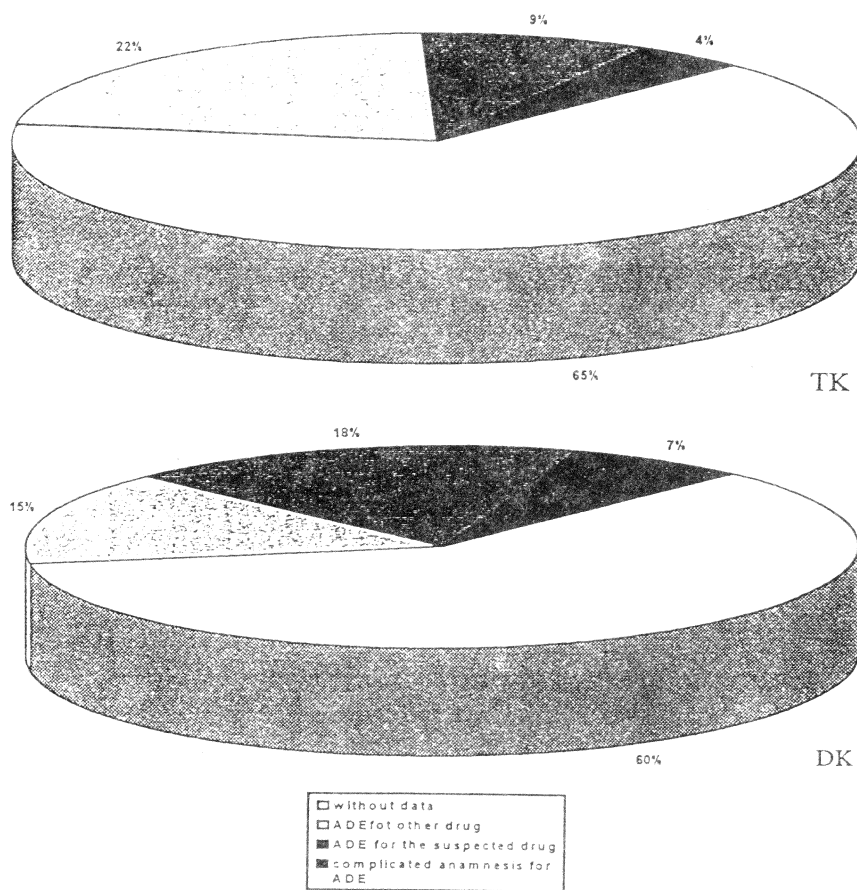


FIG.5 The distribution of the patients with ADE in toxicological and dermatological clinics in accordance with the anamnestic data for drug oversensibility.

The distribution of the ADE according to the injured system - organ show that in the dermatological clinic the biggest is the share of the skin injuries (68,08%),in the toxicological clinic - skin injuries (42,69), injuries of the peripheral nervous system (18.92%) and in the cardiological clinic - injuries of the cardiovascular system (20%) and etc. The ADE are result of the widest used medicines in our country as analgetics (analgin, acetysal and others); antibiotics and sulfonamides (amopen, ampicillin, biseptol and others).

CONCLUSIONS

1. The concrete studies of the ADE in three university clinics in Sofia show their high frequency of appearance and they are defined as serious socially medical problem for our country

2. The ethiological and risky factors as sex, age, seasonal diseases, former anamneses for drug oversensibility and selfmedication have an important influence upon the appearance, the structure and the intensity of the ADE.

The biggest part of the ADE are caused from the widest used drug in the therapeutical practice as analgin, acetysal, ampicillin, amopen and biseptol

REFERENCES

1. Bem JL, Wood SM, West L, Rawlins MD, Breckenridge AM.
25 years of the Commette on Safety medicines. An international perspective of the benefits. *Drug safety*. 1990; 5: 161-167
2. Hartzema AG, Martini N, Pharmacoepiemiology: The role of the clinical pharmacists, 1991; The upjhon company, 1-29
3. Rogers AS. Adverse drug events: identification and attribution. *Drug Intell Clin Pharm*. 1987; 21: 915-920
4. Strom BL. Medical databasis in post marketing drug surveillance. *Trends in pharmacol Sciences*. 1986; 377-380
5. Storm BL, Melmon KL. Can post marketing surveillance help to effect optimal drug therapy? *JAMA*. 1979;242; 2420-2423.