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*Changes in epidemiology of viral hepatitis in Poland at the end
of the 20th century*

Viral hepatitis is an acute inflammatory state of hepatic cells caused by different types of viruses. Among the etiological factors of viral hepatitis there are primarily hepatotropic viruses that are characterized by affinity to hepatocytes. The following viruses belong to this group: *hepatitis A* (HAV), *hepatitis B* (HBV), *hepatitis C* (HCV), *hepatitis D* (HDV), *hepatitis E* (HEV) and *hepatitis G* (HGV). Secondary damage to liver can occur in the course of other viral infections caused by secondarily hepatotropic viruses such as: Epstein-Barr virus, *Cytomegalovirus hominis*, *Herpesvirus hominis* types 1 and 2, *Varicella-zoster* virus, *Enterovirus* and others (3).

Viral hepatitis is, along with influenza, the most often recorded infectious disease in the world (2). In Poland it is the official duty to report every case of viral hepatitis.

MATERIAL AND METHODS

The analysed material comprised epidemiological data concerning the number of cases of viral hepatitis registered in Poland in the years 1990-2000. The data come from health service units in the whole country and are published by the State Hygiene Office in the form of *Reports on incidence of infectious diseases, intoxications and hospital infections*. There were analysed the number of cases, incidence, number of deaths and mortality from viral hepatitis of different types in Poland in 1990-2000. Such a period of time is sufficiently long to allow the analysis of epidemiological trends in viral hepatitis (4).

RESULTS

The gathered data concerning the incidence of all types of viral hepatitis are presented in Table 1 and Table 2. Table 3 contains the number of deaths and mortality rate from all types of viral hepatitis. The epidemiological trends in incidence and mortality are presented in Figures 1, 2 and 3, respectively.

Table 1. Number of cases and incidence (per 100 thousand inhabitants) of viral hepatitis in Poland in 1990-2000

Year	All types of viral hepatitis		Viral hepatitis type B		Viral hepatitis type non-B	
	number	incidence	number	incidence	number	incidence
1990	29,906	78.5	15,116	39.7	14,790	38.8
1991	36,728	96	13,603	35.6	23,125	60.4
1992	40,531	105.6	13,237	34.5	27,294	71.1
1993	41,778	108.6	13,296	34.57	28,482	74.03
1994	37,360	96.9	10,924	28.35	26,436	68.55
1995	30,276	78.5	9,034	23.41	21,242	55.09
1996	18,456	47.8	6,435	16.66	12,021	31.14
1997	10,709	27.72	4,830	12.5	Since 1997 as viral hepatitis A and C types: See Table 3.	
1998	8,104	20.96	3,925	10.15		
1999	6,728	17.41	3,356	8.68		
2000	5,358	13.86	2,695	6.97		

Table 2. Number of cases and incidence (per 100 thousand inhabitants) of viral hepatitis in Poland in 1997-2000

Year	Type A		Type C		Type B+C		Non defined	
	number	incidence	number	incidence	number	incidence	number	incidence
1997	4,045	10.47	998	2.58	66	0.17	776	2.01
1998	2,011	5.2	1,561	4.04	149	0.39	460	1.19
1999	1,024	2.65	1,835	4.75	152	0.39	361	0.93
2000	262	0.68	1,954	5.06	130	0.34	317	0.82

Table 3. Number of deaths and mortality rates (per 100 thousand inhabitants) from all types of viral hepatitis in Poland in 1990-1998

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998
Number of deaths from all types of viral hepatitis	306	287	244	274	217	242	191	221	188
Mortality rate	0.8	0.75	0.63	0.71	0.56	0.63	0.49	0.57	0.49

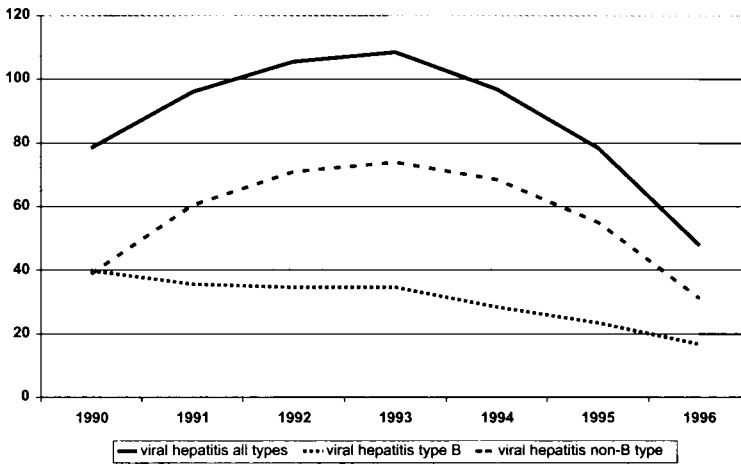


Fig. 1. Viral hepatitis in Poland in the years 1990-1996

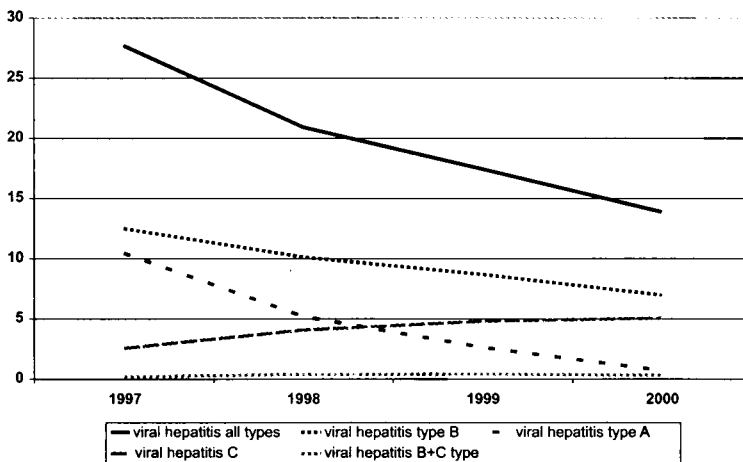


Fig. 2. Viral hepatitis in Poland in the years 1997-2000

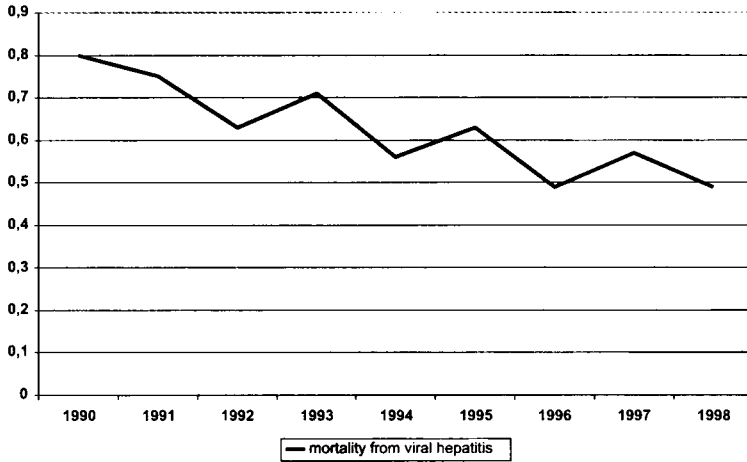


Fig. 3. Mortality rates from all types of viral hepatitis in Poland in the years 1990-1998

DISCUSSION

Viral hepatitis is, apart from influenza, the most often registered infectious disease in the world (2). All cases of hepatitis of viral aetiology are subjected to obligatory state reporting duty in Poland. Systematic blood tests of patients with hepatitis for HBs antigen (*hepatitis B surface antigen*), the main marker of HBV virus infection, were started in Poland in 1979 (11).

It allowed registration of viral hepatitis B and their isolation from the general number of cases of hepatitis. The patients in whom the HBs antigen was not detected were ranked among the non-B hepatitis group. In 1997 instead of hitherto existing B and non-B groups, there was started the registration of viral hepatitis types A and C (6).

Due to the course and consequences as well as spread of viral hepatitis type B many actions have been undertaken in order to improve the epidemiological situation of this disease in Poland. In 1998, after completing pilot vaccinations against viral hepatitis type B, there were initiated vaccinations of employees of the health service (5). At the beginning they were only employees of dialysis units, transplantology departments, infectious diseases wards, intensive care units, laboratory workers as well as emergency departments and ambulances. In 1989 there were started vaccinations of neonates born from women with presence of HBs antigen in blood as well as of children sick with leukaemia. Since 1993 there have been vaccinated large numbers of persons from risk groups, that is patients prepared for planned surgeries, chronically ill patients, people from proximity of HBV antigen carriers, employees of the health service, medical schools students and pupils (9, 14). In 1994 there were initiated vaccinations of all neonates in Poland. At first

there were vaccinated neonates in 13 voivodships characterized by the highest incidence rates among infants (10). In the next years there were vaccinated all neonates in the remaining 36 voivodships.

From the beginning of 1990s there has been observed constant decrease in incidence rates of viral hepatitis type B in Poland. The appearance of such positive, decreasing trends in incidence rates of viral hepatitis type B is a remarkable effect of the undertaken prophylactic actions. There was eliminated multiple use injection equipment. There are introduced modern steam autoclaves in place of dry air sterilizers. Wide scale prophylactic vaccinations covered large percent of people exposed to danger of HBV infection and produced considerable (over fivefold) decrease in incidence rates of viral hepatitis type B, especially after the year 1993 (6).

In the group of non-B viral hepatitis a substantial role has been played by viral hepatitis transmitted parenterally. In this group it is viral hepatitis transmitted parenterally that has the greatest influence on the incidence rate of viral hepatitis and periodicity of epidemic intensifications. In Poland it is mostly viral hepatitis type A (1). From the beginning of 1990s there occurred increase in number of cases and the signs of epidemic intensification of incidence were registered in Poland in 1993. Since 1994 there has been observed a decreasing trend in incidence that made this disease no longer an endemic one in Poland (12, 13, 15).

Viral hepatitis type C has been separately registered in Poland since 1997. Twofold increase in incidence rates that has occurred in the years 1997-2000 has been provoked by improvement in detection of the disease rather than by appearance of an epidemic. It concerns also the cases of mixed infection with hepatitis virus type B and C. However, the lack of effective vaccine against viral hepatitis type C may make this disease the greatest problem in fight against viral hepatitis in the years to come (6, 7).

Deaths from viral hepatitis type B are the main cause of mortality in the course of viral hepatitis. Also in this sphere there are observed the effects of undertaken prophylactic actions. Mortality from all types of viral hepatitis has decreased almost twofold in Poland in the years 1990-2000 (8, 10).

CONCLUSIONS

The incidence rates from all types of viral hepatitis have been increasing in Poland until 1993 and decreased abruptly after 1993, mainly due to the diminution of number of cases of viral hepatitis type A.

There was registered a decreasing trend in the incidence rates of viral hepatitis type B that was significantly intensified after 1993, i.e. since the year when mass prophylaxis vaccinations have been initiated.

Since registration of cases of viral hepatitis type C was started in 1997, the number of analytically confirmed cases of this disease has doubled.

Mortality from all types of viral hepatitis has decreased twofold in Poland in the years 1990-2000.

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SUMMARY

Viral hepatitis is, apart from influenza, the most often registered infectious disease in the world. The material comprised epidemiological data concerning the number of cases of viral hepatitis registered in Poland in the years 1990-2000. There were analysed the number of cases, incidence, number of deaths and mortality from viral hepatitis of different types in Poland in the years 1990-2000. The incidence rates from all types of viral hepatitis have been increasing in Poland until 1993 and decreased abruptly after 1993, mainly due to the diminution of number of cases of viral hepatitis type A. There was registered a decreasing trend in incidence rates of viral hepatitis type B that was significantly intensified after 1993, i.e. since the year when mass prophylaxis vaccinations have been initiated. Since registration of cases of viral hepatitis type C was started in 1997, the number of analytically confirmed cases of this disease has doubled. Mortality from all types of viral hepatitis has decreased twofold in Poland in the years 1990-2000.

Zmiany w epidemiologii wirusowego zapalenia wątroby w Polsce w końcu XX wieku

Wirusowe zapalenia wątroby (WZW) są, obok grypy, najczęściej rejestrowanymi chorobami zakaźnymi na świecie. W niniejszej pracy analizowano dane epidemiologiczne dotyczące ilości przypadków wirusowych zapaleń wątroby zarejestrowanych na terenie Polski w latach 1990-2000. Przeanalizowano liczbę zachorowań, zapadalność, liczbę zgonów i śmiertelność z powodu wirusowych zapaleń wątroby różnych typów. Zapadalność na wzw wszystkich typów rosła w Polsce do roku 1993, by po roku 1993 gwałtownie spaść, głównie za sprawą spadku zapadalności na wzw typu A. Zarejestrowano malejący trend zapadalności na wzw typu B, który uległ wyraźnemu nasileniu po roku 1993, a więc od czasu wprowadzenia masowych szczepień profilaktycznych. Od rozpoczęcia rejestracji wzw typu C w roku 1997 liczba potwierdzonych laboratoryjnie przypadków tej choroby podwoiła się. Umieralność na wszystkie typy wzw w latach 1990-2000 w Polsce zmniejszyła się dwukrotnie.