

In the passive hemagglutination reaction (3, 6, 7) there were used ram tanine red blood cells coated in Diphtheria-toxoid (Seruminstitut – Copenhagen), the control being serum solution examined with non-allergic blood cells. The protective level was established at 0.1 IU/ml (1, 3, 6, 7).

RESULTS

The research concerning the level of anti-diphtheria antibodies shows that the antibodies have different values in various age groups (Tab.1). The highest protective level was observed in persons below 20 years of age (groups I and II) who constituted 2.60 – 7.62 % of the examined persons. The lowest protective levels, on the other had, were characteristic of persons above 30 years of age (IV–VIII). The percentage of persons with decreasing protective level increased from 39.13% (31 to 40 years) up to 62.50% (71 to 80 years).

Tab.1. Percentage of the examined Lublin population with anti-diphtheria antibodies level below the protective level

| Group number | Age group (years) | Average antibodies level | % of the examined persons with the antibodies level below the protective level |
|--------------|-------------------|--------------------------|--|
| I | 0 – 10 | 13.52 | 2.60 |
| II | 10.5 – 20 | 13.62 | 7.62 |
| III | 21 – 30 | 9.62 | 15.62 |
| IV | 31 – 40 | 3.45 | 39.13 |
| V | 41 – 50 | 2.67 | 45.10 |
| VI | 51 – 60 | 3.61 | 40.35 |
| VII | 61 – 70 | 2.65 | 42.06 |
| VIII | 71 – 80 | 1.78 | 62.50 |

Fig.1 compares the percentage share of persons from each of the examined groups, with the antibodies level above and below the protective level. It can be seen from the diagram that the percentage of persons with the protective level decreases together with increasing age of the examined persons.

RESULTS AND DISCUSSION

The research showed that persons below 30 years of age constitute a group of the lowest illness risk, which corresponds to the history of vaccination. This groups is correctly protected and does not require additional vaccination. In this group, children up to 10 years constitute by far the greatest percentage of persons with protective level.

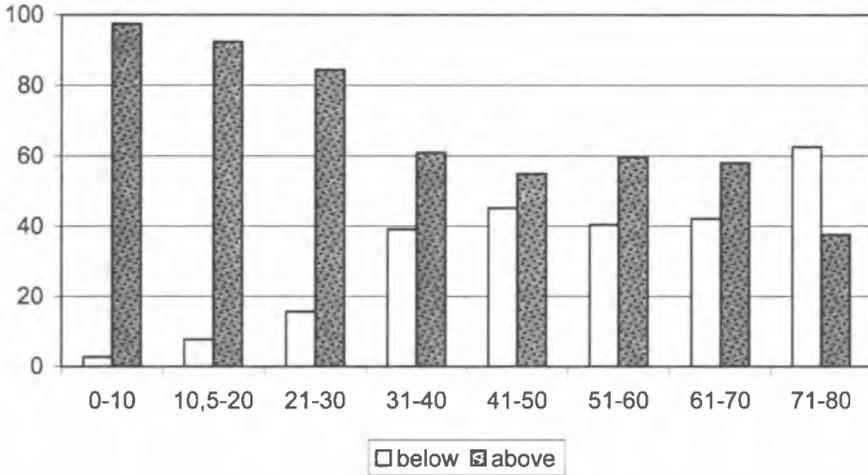


Fig.1. Percentage of persons in various age groups with the antibodies level below and above the protective level

The fact that immunity level decreases with age is alarming. This decrease can be observed in the examined persons above 30 years.

Research led in other countries confirms the unsatisfactory immunity level. A neutralisation test carried out in Germany showed that 46% of persons between 19 and 54 years lacks the required protective level of antibodies (4). In Russia, 44% of the population is below the protective level (8).

The population of eastern Poland that neighbours the diphtherial areas is particularly exposed to the disease, which makes controls of protective vaccination efficiency among this population particularly necessary.

CONCLUSIONS

Due to the lowering level of immunity against diphtheria over 30 years of age, additional vaccination in this age group should be taken into consideration, especially where particular cases of the disease were observed.

It is also important that epidemiological research estimating protective vaccination efficiency and accurate register of all cases of suspected diphtheria be held. Particular attention should be paid to big cities and eastern parts of Poland.

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STRESZCZENIE

Ze względu na pojawiające się we wschodniej części Polski przypadki błonicy przeprowadzono ocenę odporności przeciwbłonicy u mieszkańców Lublina w 8 grupach wiekowych do 80 lat. Poziom przeciwił oznaczono metodą biernej hemaglutynacji. Stwierdzono, że najmniejszą grupę ryzyka zachorowania na błonicę stanowią osoby w wieku do 30 lat, największy odsetek osób w tej grupie z mianem ochronnym to dzieci do 10 lat. Niepokojącym faktem jest obniżający się wraz z wiekiem stan uodpornienia, dlatego po 30 roku życia należy rozważyć, szczególnie na terenach występowania przypadków błonicy, szczepienia uzupełniające. Ważne jest również prowadzenie badań epidemiologicznych oceniających skuteczność szczepień ochronnych i dokładnej rejestracji wszystkich przypadków podejrzenia o błonicę.