

Both groups also differed in the mean values of positive titres (statistically insignificantly), the mean being higher in personnel ($\bar{x}=17.6$) than in blood donors ($\bar{x}=13.0$).

When comparing the studied and control groups with regard to sex, positive titres (66.7%) and a higher mean value ($\bar{x}=18.6$) were proved to be more frequent in men from the p.-i. d. depts. than in blood donors (60.2%, $\bar{x}=13.6$) — statistically insignificantly.

Women workers of the p.-i. d. depts. also had positive titres more often (73.3%) than women blood donors (63.0%), without statistical significance. Whereas highly statistically significant difference was found when comparing mean values of positive titres in both groups of women $\bar{x}=17.5$ in workers and $\bar{x}=11.2$ in blood donors.

Within the control group, the women's titres were slightly more often positive (63.0%) and their mean titre was lower ($\bar{x}=11.2$) than those of men (60.2%, $\bar{x}=13.6$). The difference between the mean values of positive titres was statistically significant.

In p.-i. d. depts. a higher percentage of positive titres (73.3%) and a lower mean titre ($\bar{x}=17.0$) was found in women than in men (66.7% and $\bar{x}=18.6$) — statistically insignificant.

While comparing the age group of the workers of p.-i. d. depts. with the group of blood donors it was found that in the first group (from 19 to 25 years of age) the percentage of positive titres (72.6%) and the mean ($\bar{x}=18.7$) were higher in the workers than in the blood donors (63.0%, $\bar{x}=15.3$). No statistical significance has been observed. In the second age group (from 26 to 40 years of age) positive titres and their higher mean were also more frequently (statistically significantly) observed in the workers (74.5%, $\bar{x}=16.6$) than in blood donors (67.2%, $\bar{x}=12.7$). In the workers and blood donors being over 40 years of age (the third group) the differences proved in the frequency of occurrence of positive titres and their mean values were statistically significant. The examined values in the workers were 70.5%, $\bar{x}=19.4$ and were higher than those in group of blood donors 46.9% and $\bar{x}=11.3$.

In the age groups of workers of the p.-i. d. depts. the examined parameters were, respectively, the following: 72.6% and $\bar{x}=18.7$ in the first group, 74.5% and $\bar{x}=16.6$ in the second one, and 70.5%, $\bar{x}=19.4$ in the third group (no statistically significant differences).

Among blood donors, the positive titres were most often observed in the second age group (67.2%), then in the first (63.0%) and the third group (46.9%). The mean value of positive titres was the highest in the first group ($\bar{x}=15.3$) and lower in the second ($\bar{x}=12.7$) and third group ($\bar{x}=11.3$), differences being statistically insignificant (Table 1).

According to the years of work in the p.-i. d. depts. no statistically significant differences were found between the distinguished three groups. In persons

Table 1. Titres of antibodies against cytomegalia virus (CMV) in blood donors (the control group) and in personnel of p.-i. d. depts. (the examined group)

Sex and groups	Number of examined persons	Titres in p.-i. d. depts.						Number of persons with positive titres	Percentage of persons with positive titres %	Mean values of positive titres \bar{x}	
		0	1:5	1:10	1:20	1:40	1:80				
Total	a	120	17	30	55	16	2	0	73	60.9	13.0
	b	249	31	37	98	60	21	2	181	72.7	17.6
Men	a	93	14	23	40	14	2	0	56	60.2	13.6
	b	21	5	2	6	6	2	0	14	66.7	18.6
Women	a	27	3	7	15	2	0	0	17	63.0	11.2
	b	228	26	35	92	54	19	2	167	73.3	17.5
Years of age and groups											
19—25	a	27	5	5	10	6	1	0	17	63.0	15.3
	b	51	10	4	19	13	4	1	37	72.6	18.7
26—40	a	61	6	14	32	8	1	0	41	67.2	12.7
	b	110	11	17	46	27	9	0	82	74.5	16.6
over 40	a	32	6	11	13	2	0	0	15	46.9	11.3
	b	88	10	16	32	20	8	2	62	70.5	19.4

Explanation: a — control group, b — examined group.

working for 11—20 years the frequency of positive titres proved the highest — 81.6% at $\bar{x} = 17.5$, in the group of up to 10 years of work it was lower (71.9%, $\bar{x} = 18.0$) and even lower in the age group of 20 years of work (65.1%, $\bar{x} = 18.6$).

In profession groups the highest percentage of positive titres was observed in nurses (74.0%) and in subsidiary personnel (73.9%), and lower in doctors (68.4%). The mean value of positive titres was $\bar{x} = 17.5$ in nurses, in subsidiary personnel $\bar{x} = 19.9$, and in doctors $\bar{x} = 15.0$. No statistically significant differences have been observed (Table 2).

DISCUSSION

It was proved that in the control group the infection with CMV was more frequent in women than in men. It can be presumed that menstruation, pregnancy, delivery and puerperium decrease the immunity in women and make them more susceptible to infection, and the contact with small children (source of

Table 2. Titres of antibodies against cytomegalia virus (CMV) in personnel of p.-i.d.depts. (the examined group) with regard to years of work and profession groups

Years of work:	Number of examined persons	Titres in p.-i.d.d.depts.						Number of persons with positive titres	Percentage of persons with positive titres %	Mean values of positive titres \bar{x}
		0	1:5	1:10	1:20	1:40	1:80			
to 10	157	23	21	57	41	14	1	113	71.9	18.0
11—20	49	1	8	22	14	3	1	40	81.6	17.0
over 20	43	7	8	18	5	4	1	28	65.1	18.6
Profession groups: doctors	38	6	6	17	7	2	0	26	68.4	15.0
nurses	123	14	18	53	27	9	2	91	74.0	17.5
subsidiary personnel	88	11	12	27	27	10	1	65	73.9	19.9

CMV) is conducive to infection (3, 16). Similar results were obtained by Kudlicka (8) in 1982 while examining the population of the Lublin province.

The age, just as sex, affects man's infection with CMV. In the control group the percentage of persons infected with CMV has been increasing from 19 to 40 years of age and decreasing over 40 years of age. The mean values of those titres increased with ageing. Similar to above observations were those made by Kudlicka (8), Stern (14) as well as Wong Ting-Wa et al. (19).

The results of the author's own studies and the data from literature can be explained by the fact that the period between 19 and 40 years of age corresponds to a considerable vital and sexual activity, and in women the pregnancies and deliveries are additionally conducive to infections. In the group of persons being over 40 years of age one can expect the lowering of the acquired immunity. The obtained data in this age group are not always in accordance with other reports (1, 6).

Persons working in the surrounding of infectious material were significantly more often subject to CMV infection, and the titres of antibodies had higher values than the control group. It is not only the very CMV, being either temporarily or permanently present in secretions and excrements of the ill and carriers which matters, but also — indirectly — other micro-organisms which affect the immunological system and clear the way for infections. Similar observations were made by Szepietowski et al. (4).

Among persons under special risk of infection women were more susceptible to infections than men (just as in the control group). It is worth paying attention to the fact that women workers of the p.-i.d.depts. had significantly higher titres of antibodies than women blood donors.

In the age groups of workers of p.-i.d.depts. the infection with CMV has been noted more often than in analogical age limits in blood donors. The parameters

of infection in persons aged 19—25 years and 26—40 years were similar, however, in persons over 40 a distinct decrease in the frequency of CMV infection observed in blood donors did not concern workers. It can be assumed that the contact with micro-organisms mobilized the immunological system to a permanent production of antibodies at a higher titre, irrespective of age.

The frequency of infection with CMV as well as the levels of antibodies in workers of p.-i.d.depts. are similar according to their years of work. Lack of total agreement may result from the fact that persons in particular age groups have a different period of employment. The percentage of infected persons has been increasing in those working for up to 20 years, and decreasing in those who worked longer. Szepietowski et al. (17) pointed to a permanent increase in the number of infected persons, which has been growing together with time of their work, but they took into consideration other periods of working time and examined a smaller group.

When discussing profession groups the author of the paper proved, just as Dworsky et al. (4), that nurses and subsidiary personnel are exposed to infection in a similar degree which is higher than that in doctors. The titres of CMV antibodies are also higher. This results from the fact that personnel has the most direct contact with secretions and excrements constituting the infectious material.

Conclusions

1. Positive titres with higher values were found in the workers of the p.-i.d.depts. more often than in the control group.
2. Sex and age have an influence on the frequency and mean value of positive titres of CMV antibodies in the workers of the p.-i.d.depts. and in the control group.
3. Years of work in the p.-i.d.depts. condition the frequency of occurrence and mean value of positive titres of CMV antibodies.
4. Nurses and subsidiary personnel in p.-i.d.depts. have positive titres of CMV antibodies and a higher mean of their values more often than the doctors have.

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Otrzymało 1992.11.06.

STRESZCZENIE

Oceniano podatność na zakażenie wirusem cytomegalii na podstawie badania osób, które z racji wykonywanego zawodu miały stały i bezpośredni kontakt z materiałem zakaźnym (pracowników oddziałów obserwacyjno-zakaźnych) i porównywano z grupą kontrolną (krwiodawców). Wzięto pod uwagę płeć, wiek, staż pracy w oddziale i wykonywany zawód. Stwierdzono, że wśród pracowników oddziałów obserwacyjno-zakaźnych dodatnie miana przeciwciał przeciwko wirusowi cytomegalii występowały statystycznie istotnie częściej (72,7%) i w wyższych mianach niż w grupie kontrolnej krwiodawców (60,9%). Zauważono, że płeć warunkowała zarówno częstość występowania mian dodatnich, jak i średnią ich wysokość, gdyż kobiety pracujące w oddziałach obserwacyjno-zakaźnych i krwiodawczynie częściej ulegały zakażeniu niż mężczyźni. W grupach badanych i grupie kontrolnej od wieku zależał odsetek osób posiadających dodatnie miana przeciwciał i średnie ich wysokości. Ludzie w wieku młodszym częściej ulegali zakażeniu niż w starszym. Również lata pracy w oddziale obserwacyjno-zakaźnym miały znaczenie, gdy chodzi o częstość występowania mian dodatnich przeciwciał przeciwko wirusowi cytomegalii i ich średnią wysokość. Także od wykonywanego zawodu zależały uzyskane wyniki, a mianowicie u pielęgniarek i personelu pomocniczego częściej stwierdzano dodatnie miana przeciwciał i wyższe ich wartości niż u lekarzy.