



79th



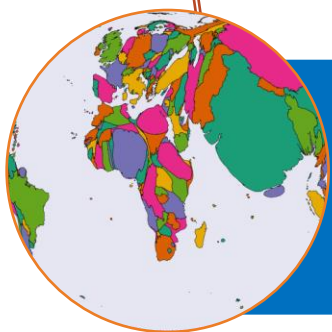
International
Scientific
Conference of
the University
of Latvia

Inpatient incidence of intracranial injury in Kazakhstan: spatial assessment

Akhmetov Kanat, Akshulakov Serik, Igissinov Nurbek



Background. It has been estimated that traumatic brain injury affects over 54 to 60 million people annually, leading to either hospitalisation or mortality. Of all types of injury, those to the brain are among the most likely to result in death or permanent disability. According to the Global Burden of Disease Study 2016, there were 27.08 million new cases of traumatic brain injury, with age-standardised incidence rates of 369 per 100 000 population, per year.



Aim. Make a cartogram of the incidence of intracranial injury (II) in Kazakhstan.



Methods. When compiling cartograms, indicators of II morbidity (ICD 10–S06) for 10 years (2009–2018) were used and a method of compiling cartograms was used, based on determining the standard deviation (σ) from the mean (x).

Results

During the study period, 473 440 new cases of II were registered. The average annual incidence of intracranial injury was 279.1 ± 11.6 per 100 000 population.

To compile cartograms, at the beginning, the incidence rates of II were determined, which corresponded to the following criteria: low – up to $233.1^{0}/_{0000}$, medium – from 233.1 to $292.4^{0}/_{0000}$, high – above $292.4^{0}/_{0000}$.

Results

LOW RATES

1. Regions with low rates (up to $233.1^{0}/_{0000}$) – North Kazakhstan ($168.4 \pm 7.4^{0}/_{0000}$), Kostanay ($186.8 \pm 10.4^{0}/_{0000}$), Mangistau ($203.3 \pm 11.3^{0}/_{0000}$), Atyrau ($203.4 \pm 7.5^{0}/_{0000}$), West Kazakhstan ($209.9 \pm 13.5^{0}/_{0000}$) areas, as well as the city of Astana ($229.9 \pm 21.5^{0}/_{0000}$).

AVERAGE

2. Regions with average indicators (from 233.1 to $292.4^{0}/_{0000}$) – Karaganda ($242.1 \pm 19.3^{0}/_{0000}$), Kyzylorda ($250.5 \pm 11.6^{0}/_{0000}$), Aktobe ($278.8 \pm 15.0^{0}/_{0000}$), Akmola ($284.7 \pm 19.7^{0}/_{0000}$) areas.



3. Regions with high rates ($292.4^{0}/_{0000}$ and higher) – East Kazakhstan ($296.5 \pm 6.2^{0}/_{0000}$), South Kazakhstan ($304.1 \pm 7.8^{0}/_{0000}$), Zhambyl region ($313.4 \pm 19.1^{0}/_{0000}$), Almaty ($341.9 \pm 17.4^{0}/_{0000}$), and Pavlodar ($363.3 \pm 13.8^{0}/_{0000}$) areas, as well as the city of Almaty ($326.6 \pm 18.3^{0}/_{0000}$).

CONCLUSION

Thus, the established regional features of the incidence of intracranial injury indicate variability with territorial differentiation in terms of incidence rates. The obtained results will allow healthcare organizers to have a clear spatial picture of the incidence of II, which is necessary for carrying out treatment and preventive measures.