

A TWO-STAGE RETROSPECTIVE-PROSPECTIVE DESIGN AS A METHODOLOGICAL BASIS FOR STUDYING RECURRENT HERPES SIMPLEX INFECTION

Khamidova Nargiza Kosimovna.

Bukhara State Medical Institute, Bukhara, Uzbekistan

Relevance. Recurrent herpes simplex infection (RHSI) requires simultaneous investigation at two levels. Territorial spread, seasonal dynamics and the spectrum of provoking factors are established by epidemiological methods, whereas the immunological and hereditary basis of a recurring course is revealed only through clinical, laboratory and molecular genetic examination. Study designs that address just one of these levels yield fragmentary results and do not permit population-level and individual-level data to be linked.

Aim. To substantiate a study design that allows the epidemiological, clinical, immunological and molecular genetic characteristics of RHSI to be examined within a single cohort.

Materials and methods. An open, two-stage retrospective-prospective observational study with a control group was carried out between 2023 and 2026 at the Bukhara Regional Branch of the Republican Specialised Scientific and Practical Medical Centre of Dermatovenereology and Cosmetology and at the Bukhara Regional Infectious Diseases Hospital.

At the first, retrospective stage, dispensary reporting materials, outpatient medical records (form 025/u), dispensary follow-up cards (form 030/u) and annual statistical reports for 2022–2026 were analysed. At the second, prospective stage, participants underwent clinical, laboratory, immunological and molecular genetic examination and were placed under dynamic observation.

Results. The retrospective stage covered 1864 recorded consultations and provided the basis for forming a sample representative of the region by territorial distribution and by age and sex composition. A total of 240 participants aged 18 to 68 years were enrolled in the prospective stage using consecutive sampling and allocated to three groups: a main group (n=140) with a clinically active recurring course, a comparison group (n=60) with a mild-to-moderate infrequently recurring course, and a control group (n=40) of apparently healthy individuals.

The sample size was justified by statistical power calculation. Under a two-sided significance level of $\alpha=0.05$, power $1-\beta=0.80$ and a group ratio of 3.5:1, the minimum required size is 27 participants for the control group and 93 for the main group. The size actually enrolled provides 79.6% power for a medium effect (Cohen's $d=0.5$) and 99.4% for a large effect ($d=0.8$).

Four independent examination blocks — epidemiological, clinical, laboratory and molecular genetic — were performed concurrently in every participant, which made it possible to combine risk index data, the immunological profile and genotype within a single analysis.

Conclusion. The two-stage retrospective-prospective design allows population-level and individual-level characteristics of RHSI to be studied within one cohort. The retrospective stage ensures sample representativeness and establishes regional baseline indicators, while the prospective stage provides a comprehensive assessment of the recurring course. This approach may be recommended for regional studies of chronic recurring infections.