

Epidemiological Analysis on Breakthrough Cases of Varicella Outbreaks in District of Minhang, Shanghai

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Background/Objective

To analyze the epidemiological characteristics of breakthrough cases in varicella outbreaks and provide evidence for varicella prevention and control

Method

Descriptive epidemiological methods was used to description the reported data of outbreaks and sporadic cases from 2008 to 2014. Data entry using Excel 2007, mapping and analysis and comparison with SPSS 13.0

Result

There were 13511 varicellas reported in Minhang District. There were 154 outbreaks of varicella, The average duration of outbreaks was 45.8 days, 1558 cases were reported, of which 660 cases had Varicella Attenuated Live Vaccine (VarV) vaccination history (All of them was one Doses). The incidence of breakthrough cases was 42.36% , the lowest was 21.47% in 2008, the highest in 2014, up to 86.08%. Breakthrough cases were used as the index cases in 15 outbreaks , accounting for 9.74% of the outbreaks. There were two peaks from March to May and from October to December. The breakthrough cases occurred mainly in the 5-year-old group, accounting for 65.91%, followed by the 10-year-old group, accounting for 22.12%. Combining with vaccination rate analysis, it showed that one dose of VarV vaccination have played a very good protection for 3-4 years old children, but the protection weakens for children over 5 years old . The mean time since vaccination was 6.17 ± 2.26 years. Among these 660 breakthrough cases time since vaccination more than 3 years accounted for 91.52%, and that more than 5 years accounted for 73.79% . There was no significant difference between the vaccine types ($\chi^2=1.950$, $p=0.3773$).

Conclusion

The incidence of breakthrough cases in varicella outbreaks had increased. The protective effect of one dose of VarV immunization program was insufficient for primary and secondary school students, which recommended that primary school students should receive a second dose VarV before enrollment