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# The association of hypnotics use and the risk of new-onset stroke in Taiwan : a population-based cohort study

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**Background:** The prevalence of insomnia in Taiwan is 11.3%, and the number of people using sedative hypnotics in 2018 has exceeded 4 million. Therefore, it is important whether hypnotics are associated with other diseases. Besides, cerebrovascular disease has been ranked among the top 10 causes of death in Taiwan for many years, but he association of hypnotics use and the risk of new-onset stroke is still unclear now. The aim of this study is to evaluate it. **Methods:** The retrospective cohort study based on data from the National Health Insurance Research Database(NHIRD), and we included all patients aged 40 to 90 in 2004. After a series of exclusions, the remaining 122,488 people as the study group and followed up to December 31, 2013. The 1:1 propensity score method was used to match by age, sex, and we measure the effect of hypnotics by Cox proportional hazards regression and Kaplan-Meier survival curves to compare with different kinds of hypnotics and strokes.**Results:** Patients in the hypnotics group would significantly increase the risk of stroke (HR=1.64; 95% CI, 1.56-1.72). If classified by drug types, both BZD (HR=1.60; 95% CI, 1.50-1.71) and Z-Drug (HR =1.45; 95% CI, 1.29-1.63) were also increase risk; In addition, long-term use of hypnotic increase the risk of ischemic stroke (HR=1.63; 95% CI, 1.54-1.73). However, we did not found a significantly increase risk between hypnotics and hemorrhagic stroke (HR=1.07; 95% CI, 0.80-1.45).**Conclusion:** We found that long-term use of hypnotics increases the risk of stroke, especially ischemic stroke.

| Variable | ≧180 days Hypnotics users (n=39,906) | NON-HYPNOTICS USERS (n=39,906) |
|---|---|---|
| | n (%) | n (%) |
| **Gender** | | |
| Female | 25,584(64.11) | 25,584(64.11) |
| Male | 14,322(35.89) | 14,322(35.89) |
| **Age** | | |
| 40≦x＜65 | 30,469(76.35) | 32,425(81.25) |
| 65≦x＜75 | 6,660(16.69) | 5,192(13.01) |
| x≧75 | 2,777(6.96) | 2,289(5.74) |
| Mean(SD) | 56.1(10.8) | 54.8(10.3) |

| Variable | Crude | | Adjusted | |
|---|---|---|---|---|
| | HR (95%CI) | P value | HR (95%CI) | P value |
| **≧180 days Hypnotics users (n=39,906)** | | | | |
| non-users | ref | | ref | |
| users | 3.248 (3.112-3.390) | <0.0001 | 1.550 (1.465-1.640) | <0.0001 |
| **Benzodiazepines (n=28,345)** | | | | |
| non-users | ref | | ref | |
| users | 3.135(2.985-3.293) | <0.0001 | 1.600(1.502-1.705) | <0.0001 |
| **Z-drug (n=11,561)** | | | | |
| non-users | ref | | ref | |
| users | 2.670(2.467-2.890) | <0.0001 | 1.445(1.285-1.626) | <0.0001 |

## Biography

Chen-Feng, Ho major in master degree in school of pharmacy, China Medical University in Taiwan. He is engaged in statistical analysis of clinical pharmacy and assists professor in teaching the statistical knowledge of college students

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