IS PD IN BOXERS JUST A COINCIDENCE? NO

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Boxing has been claimed to be the most frequent cause for parkinsonism associated with chronic repetitive head injury. The purpose of our study is to determine the prevalence of Parkinson's disease (PD) and other parkinsonism in retired Thai traditional boxers**.** Two standardized screening questionnaires were sent to all registered Thai traditional boxers in Thailand. Subjects who screened positive for parkinsonism were invited for clinical examination by two independent neurologists. Probable PD was diagnosed based on UKPDSBB Criteria. Among 1,005 boxers, 704 boxers (70%) completed the questionnaires. Of those, 8 boxers (1.14%) had parkinsonism; 5 with PD, 1 with progressive supranuclear palsy and 2 with vascular parkinsonism. Boxers with PD had older mean age comparing to those without PD (p = 0.003). The analysis of probable risk factors disclosed an association between number of professional bouts (>100 times) and PD (p=0.01). The crude prevalence of PD in Thai boxers was 0.71% (95% CI: 0.09 to 1.33), increasing significantly with age. The prevalence rate of PD in those aged 50 and above was 0.17% (95% CI: 0.15-0.20), age-adjusted to US 1970 consensus. The prevalence rate of PD in retired Thai traditional boxers was comparable to that of general populations in Asian and Western countries. The analysis determines the number of professional bouts as a risk factor among these cases, supporting the notion that repetitive head trauma may pose additional risk to certain individuals who are already susceptible to PD.

To further study the pathomechanism of boxers with parkinsonism, we studied three retired professional Thai boxers with parkinsonism with ^{18}F-FDOPA PET/CT to determine if their parkinsonism is identical to idiopathic Parkinson disease. Three retired professional Thai boxers each of whom had fought more than 100 fights with several knockouts and had developed parkinsonism. This population was then compared with three matched controls with idiopathic PD who were similar on the characteristics of sex, Hoehn & Yahr stages, and UPDRS-III and disease duration. Comparisons of these boxers with parkinsonism and the PD control group revealed that the mean putamen (p=0.037) uptake were lower in the PD control group. Further comparisons yielded significant differences in the anterior putamen (p=0.046), ipsilateral anterior putamen (p=0.048), and were most pronounced in the contralateral posterior putamen group (p=0.021). These results suggest that boxers with parkinsonism may be etiologically distinct from idiopathic PD. However, these boxers probably represent a group of patients who are susceptible to PD but cumulative chronic head trauma from boxing poses an additional risk factor to these boxers who are already at risk.