

# 飲水型地方性砷中毒神經系統損害臨床觀察及研究

李澤宇<sup>1\*</sup> 鄭宏君<sup>1</sup> 韓萍<sup>1</sup> 王風岐<sup>1</sup> 馬恒之<sup>2</sup>  
李珍珍<sup>1</sup> 烏日娜<sup>1</sup> 孫萍<sup>1</sup> 鄂蘭平<sup>1</sup> 武克恭<sup>2</sup>

ZE-YU LI<sup>1\*</sup>, HONG-JUN ZENG<sup>1</sup>, PING HAN<sup>1</sup>, FENG-GI WANG<sup>1</sup>, HENG-ZHI MA<sup>2</sup>, JEN-JEN LI<sup>1</sup>, RI-NA WU<sup>1</sup>,  
PING SUEN<sup>1</sup>, LAN-PING EH<sup>1</sup>, KE-GONG WU<sup>2</sup>

<sup>1</sup> 呼和浩特市內蒙古醫學院第一附院神經科，內蒙古呼和浩特市通道北街1號

Department of Neurology, First-Affiliated Hospital, Inner Mongolia Medical College, Huhhot, Inner Mongolia.

<sup>2</sup> 內蒙古地方病防治研究所

Inner Mongolia Institutes for Endemic Disease Control and Research, Huhhot, Inner Mongolia.

\* 通訊作者Correspondence author.

**目標：**研究飲水型地方性砷中毒對神經系統損害引起的臨床特徵及變化規律，旨在提高地方性砷中毒神經系統損害認知，完善慢性砷中毒臨床神經病學內容。**方法：**採用經流行病學調查已確定為飲用高砷水(0.5-1.43 mg/L)病區的277名病人和飲用非高砷水的61名健康人進行對照研究。兩組均進行全面的神經系統檢查，以及飲用水、尿液、血液及頭髮砷含量的測定，部份進行腦電圖、肌電圖、視覺誘發電位和眼底攝影等檢查。**結果：**發現病區組患者眼底視乳頭周邊棕褐色色素帶及視網膜黃斑周圍區色素沈著，與對照組相比有顯著統計學差異， $P<0.05$ ，其色素帶寬度值與體內砷蓄積總量，髮砷含量有明顯相關性， $P<0.01-0.05$ 。視力下降、視神經萎縮、視覺誘發電位P100潛伏期延長兩組有極顯著性差異， $P<0.01$ 。嗅覺減低、聽力下降、手足出汗異常、雷諾氏現象、末梢神經炎病區組高於對照組， $P<0.01-0.05$ ，脛後神經感覺傳導速度減慢見於末梢神經炎早期。腦中樞神經損害症狀表現為以失眠為主的神經衰弱症候群，腦電圖呈界限性和輕度異常多見於病區組， $P<0.05$ 。體內砷蓄積總量達2681-3077mg時，6年左右出現明顯的周圍神經及中樞神經損害症狀。**結論：**飲水型地方性砷中毒引起明顯的植物神經功能障礙及包括顱神經在內的周圍神經損害症狀。其視神經異常及眼底視乳頭周邊特殊色素帶對診斷具有重要參考價值。(中華衛誌 1999；18(附冊 1)：73-77)

關鍵詞：地方性砷中毒、飲水型、神經系統。

## Clinical research of the manifestation of nervous system lesion for endemic arsenism of drinking water type.

**Objectives:** The clinic characterized symptoms of nervous system and the change rule were researched on endemic arsenism for drinking water type, the purpose was to raise the standard of clinic diagnosis and complement the content of clinic neurology of arsenism. **Methods:** The total patient 277 for drinking high arsenic water (0.5-1.43 mg/L) were confirmed by the epidemic investigation. 61 health persons for drinking tap water were used to compare with the patient groups. The two groups was inspected the arsenic content of drinking water, urine, blood and hair respectively. The electroencephalography (EEG), electromyography (EMG), vision induce potential (VIP) and eyeground take a photography and the examination of the nervous system physical also were inspected for the two groups. **Results:** The patient group fundus oculi showed the brown-gray pigmented zone of the neuropapilli around and the pigmented of retina yellow spot around, the health group eyeground showed the occasion light abnormal. Compared the patient group with the health group, the ratio showed the marked high statistics difference,  $p<0.05$ . Between the value of pigmented zone of eyeground and the content of accumulated of arsenic have obvious interrelationship,  $p<0.01-0.05$ . The optic fall, optic atrophy and VIP p100 latent the conduction delayed were seen the patient group,  $p<0.01$ . The olfaction lower, auditus fall, extremities perspire abnormal, renauts phenomenon and extremities periphery neuritis also were found the patient groups ( $p<0.01-0.05$ ). The tibiaeoposterion-nerve, conduction delayed was showed on the early stage of periphery neuritis. The manifestation of central nervous system showed the characteristic neurosis. The symptom of insomnia was often seen in the patient group. The EEG showed the boundary line type or the light abnormal,  $p<0.05$ . **Conclusions:** The manifestation of periphery nervous and central nervous appeared for drinking high-arsenic water was about six years. The accumulated content of arsenic was up to 2981-3077 mg in the body of the patient. The brain nervous damages were more often seen in the patient group, the characteristic of the optic atrophy, the pigmented zone of the neuropapilli around and yellow spot for arsenism have the important diagnosis value. (Chin J Public Health. (Taipei): 1999;18(suppl 1):73-77)

**Key words:** endemic arsenism, drinking water, manifestation of nervous system.