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ORIGINAL ARTICLE

Management of Adult Growth Hormone Deficiency at Peking Union Medical College Hospital: A Survey among Physicians△

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Key words: adult growth hormone deficiency; management; continued medical education

Objective To evaluate physicians' attitude and knowledge about the management of adult growth hormone deficiency (AGHD) at Peking Union Medical College Hospital and impact factors associated with better decision-making.

Methods A 21-question anonymous survey was distributed and collected at Peking Union Medical College Hospital, a major teaching hospital in Chinese Academy of Medical Sciences. Data of physicians' educational background, clinical training, patient workload per year and continuing medical education in AGHD were collected. Factors associated with appropriate answers were further analyzed by multivariate regression models.

Results One hundred and eighteen internal medicine residents, endocrine fellows, attending physicians and visiting physicians responded to the survey. Among them, 44.9% thought that AGHD patients should accept recombinant human growth hormone replacement therapy. Moreover, 56.8% selected insulin tolerance test and growth hormone-releasing hormone-arginine test for the diagnosis of AGHD. Logistic regression analysis of physician demographic data, educational background, and work experience found no consistent independent factors associated with better decision-making, other than continued medical education, that were associated with treatment choice.

Conclusions The physicians' reported management of AGHD in this major academic healthcare center in Beijing was inconsistent with current evidence. High quality continued medical education is required to improve Chinese physician management of AGHD.

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ADULT growth hormone deficiency (AGHD) is a debilitating condition, associated with reduced muscle mass and muscle strength, osteoporosis, obesity and increased risk factors of metabolic syndrome.[1, 2] AGHD is resulted from tumors, pituitary surgery, radiation therapies of the head, traumatic brain disease and other hypothalamic-pituitary disease. Recombinant human growth hormone (rhGH) replacement therapy provides benefits in body composition and quality of life.[3, 4] The Endocrine Society Clinical Guideline on Evaluation and Treatment of Adult Growth Hormone Deficiency has been published in 2006[5] and updated in 2011.[1]

In Chinese population, the incidence rate of pituitary tumor and child-onset growth hormone deficiency (GHD) was about 1/100 000[6] and 1/8646[7] respectively. But the prevalence of AGHD is unknown. Although there is certain progress in the management of AGHD, variance in practice also exists in Chinese physicians. There is no consensus or clinical guidelines about AGHD in China so far. And we have not found any research articles evaluating quality of care about AGHD patients in Chinese medical literature database, Medline or Embase. In the present study, we investigated the knowledge and attitude of Chinese physicians in the management of AGHD patients in general.

SUBJECTS AND METHODS

Setting

Peking Union Medical College Hospital (PUMCH) is a major academic healthcare center of modern medicine in Beijing. Its endocrinology division is one of the oldest subspecialty programs in endocrine disorders in China.[8] Each year our division provides care for 100 000 patients with endocrine disorders in out-patient clinic and 1300 patients in subspecialty wards.

Questionnaire

The questionnaire comprises 21 questions, including the respondents' demographic characteristics, education background and clinical experience, level of their hospital, patient workload seen per year, and experiences of continuing medical education (CME) in recent three years. Questions about the knowledge and attitude toward AGHD management were based on the key points recommended by the Endocrine Society Clinical Practice Guideline on Evaluation and Treatment of Adult Growth Hormone Deficiency.[1]

Subjects

The study subjects are physicians working or being trained in the department of Endocrinology in PUMCH, including residents, endocrinologists and visiting physicians. The questionnaires were answered anonymously. The response of each question was classified as appropriate if it was consistent with the recommendation of the Endocrine Society guidelines[1] as follows:

(1) The insulin tolerance test (ITT) and the growth hormone-releasing hormone (GHRH)-arginine test should be used to establish the diagnosis of AGHD.

(2) If the causes of the GHD in children are structural lesions with multiple hormone deficiencies and proven genetic causes, a low insulin-like growth factor I (IGF-I) level at least 1 month off rhGH therapy is sufficient documentation of persistent GHD without additional provocative testing.

(3) rhGH replacement therapy offers significant clinical benefits in body composition, exercise capacity, skeletal integrity and the quality of life.

(4) rhGH dosing regimens should be individualized rather than weight-based and start with low doses and be titrated according to clinical response, side effects, and IGF-I levels.

(5) Treatment is contraindicated in the presence of an active malignancy. Thyroid and adrenal function should be monitored during rhGH therapy of adults with GHD.

Statistical analysis

Characteristics of the participants and the responses to each question have been recorded. SPSS 17.0 software was used to analyze the data. Categorical variables are expressed as percentage. Factors associated with appropriate answers were further analyzed by multivariate regression models.

RESULTS

Characteristics of respondents

The response rate was 93.8% (122/130). Among the 122 questionnaires collected, 4 of the respondents answered less than 20% of the clinical questions and were excluded from further analysis. The remaining 118 respondents answered all questions and were further analyzed as study subjects. For valid responses, we identified 61 residents, 41 attending physicians, 12 associate professors and 4 professors. All of the respondents were working in a tertiary academic healthcare center. Among them, 53.4% had more than 5 years work experience, 25.4% saw more than 10 anterior hypopituitarism patients per year and 9.3% saw more than 10 AGHD patients per year. Only 35.6% had had CME of any kind in the disease. Other features of the respondents' educational background and work experience are listed in Table 1.