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**NATIONAL OCCUPATIONAL HEALTH STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GBZ 5-2016

Replacing GBZ 5-2002

**Diagnosis of occupational fluorine and inorganic compound
poisoning**

职业性氟及其无机化合物中毒的诊断

(English Translation)

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Foreword

This standard is formulated in accordance with the Law of the People's Republic Chapter 6 of this standard is recommended and the rest are mandatory.

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard replaces GBZ 5-2002 "Diagnostic Standard for Industrial Fluorosis"; compared with GBZ 5-2002, the main technical changes are as follows.

--- The standard name was changed from "Diagnostic Standard for Industrial Fluorosis" to "Diagnosis of Occupational Fluoride and Its Inorganic Compound Poisoning";

--- Amend the "Diagnostic Principles of Industrial Fluorosis" to "Diagnostic Principles of Chronic Poisoning";

--- Amend the "segmentation of bone X-ray changes" to "chronological diagnosis of chronic poisoning";

--- Deleted the observation object;

--- Increased the diagnosis and treatment of acute fluoride and its inorganic compound poisoning.

1 Scope

This standard specifies the principles for the diagnosis and treatment of occupational fluorine and its inorganic compound poisoning.

This standard applies to the diagnosis and treatment of occupational fluorine and its inorganic compound poisoning.

This standard does not apply to the diagnosis and treatment of acute organofluorine poisoning and endemic fluorosis.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only the dated version applies to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 16180 Labor ability appraisal employee injury and occupational disease disability level GBZ 51 diagnostic criteria for occupational chemical skin burns GBZ 73 Occupational acute chemical toxicity diagnostic criteria for respiratory diseases GBZ 74 Diagnostic criteria for occupational acute chemical toxicity heart disease GBZ/T 228 diagnostic criteria for sequelae of occupational acute chemical poisoning WS/T 30 method for determination of ion selective electrode in urine WS/T 212 Determination of fluoride in serum - Ion selective electrode method

3.1 Acute poisoning

According to the occupational history of exposure to higher concentrations of fluoride and its inorganic compounds in the short term, acute respiratory damage and symptomatic hypocalcemia are the main clinical manifestations, combined with laboratory blood (urine) fluoride and blood calcium and other test results, refer to the job site occupational health information, exclude other reasons After a similar disease, a comprehensive analysis can be diagnosed.

3.2 Chronic poisoning

According to the occupational history of close contact with fluorine and its inorganic compounds for 5 years and above, the clinical manifestations based on skeletal damage, combined with experiments the results of blood (urine) fluoride test, refer to occupational health information on the job site, and exclude other diseases caused by other causes, comprehensive analysis diagnosis.

4 Contact reaction

After short-term exposure to a large amount of fluorine and its inorganic compounds, one of the following manifestations occurred and was significantly reduced or disappeared within 72 hours of disengagement.

- a) eye pain, tearing, photophobia, cough, sore throat, chest tightness and dizziness, fatigue, palpitations and other symptoms;
- b) Blood calcium is reduced but has no clinical manifestations.

5.1.1 Mild poisoning

Short-term exposure to higher concentrations of inorganic fluoride, dizziness, fatigue, cough, sore throat, palpitations, chest tightness, nausea, vomiting and other symptoms and blood (urine) fluoride Increased and has one of the following performances.

- a) acute tracheal-bronchitis (see GBZ 73);
- b) 1 degree to 2 degrees of laryngeal edema (see GBZ 73);
- c) ECG shows prolonged QT interval or abnormal ST-T changes;
- d) Paroxysmal supraventricular tachycardia or single-source ventricular premature contraction (see GBZ 74).

5.1.2 Moderate poisoning

Based on 5.1.1, it has one of the following performances.

- a) acute bronchial pneumonia or interstitial pulmonary edema (see GBZ 73);
- b) 3 degree laryngeal edema (see GBZ 73);
- c) paroxysmal ventricular tachycardia or multi-source ventricular premature contraction (see GBZ 74);
- d) Repeated convulsions.

5.1.3 Severe poisoning

Based on 5.1.2, it has one of the following performances.

- a) alveolar pulmonary edema (see GBZ 73);
- b) acute respiratory distress syndrome (see GBZ 73);
- c) 4 degrees of laryngeal edema or asphyxia (see GBZ 73);
- d) hypocalcemia crisis (ventricular tachycardia, ventricular fibrillation and epileptic

seizures);

e) Sudden death.

5.2.1 Mild poisoning

Long-term close contact with fluorine and its inorganic compounds, and one of the following manifestations.

a) The trunk bone (pelvis and lumbar vertebrae) are mainly changed; the bone density is increased; the trabecular bone is thickened and thickened, and it is "gauze-like";

b) There is a clear calcification or ossification of the periorbital bone (osteophyseal, interosseous membrane) of the ulna, ulna or iliac crest.

5.2.2 Moderate poisoning

The bone density of the trunk was significantly increased; the trabecular bone was significantly thickened, showing a "sack pattern"; accompanied by a defined change in the periosteum and periosteum of the long bone.

5.2.3 Severe poisoning

Most of the bones in the body are involved; the bone density is significantly increased, the trabecular bone is blurred, and it is "marble-like"; the long bone cortex is thickened and the medullary cavity is changed.

Narrow; periosteal changes are more obvious, bone bridges can form between the vertebral bodies.

6.1.1 Acute poisoning

6.1.1.1

Keep the airway open and perform a tracheotomy if necessary.

6.1.1.2

Dynamic monitoring of blood fluoride, blood calcium, myocardial enzymes and electrocardiogram.

6.1.1.3

Early intravenous supplementation of a sufficient amount of calcium.

6.1.1.4

Other symptomatic and supportive treatments, protection of cardiopulmonary and other multi-organ function.