

Thoracodynia from the Perspective of General Practitioners

Jian Gao¹

¹International Education School, China Medical University, Shenyang, Liaoning, P. R. China-110122

Email address: jgao18@cmu.edu.cn

Abstract— This paper introduces how to look at thoracodynia from the perspective of general practitioners. Using general clinical diagnosis and treatment thinking to deal with thoracodynia, especially acute thoracodynia. Look at patients with thoracodynia, especially acute patients, from the general practitioner's clinical diagnosis and treatment thinking. Thoracodynia is a common symptom in hospitals, involving multiple organ systems. Rapid and accurate differential diagnosis is the difficulty and focus of thoracodynia. In many places, the diagnosis and treatment of thoracodynia has been trained as a special education for general practitioners, which has significantly improved the general practitioners' cognition and handling ability of thoracodynia. According to the teacher's explanation and comments in class, the PBL discussion of each member of the group, and the reading of personal literature after class, this article was finally formed, hoping to have a better understanding of the future study of thoracodynia, especially the hierarchical and classified learning of distinguishing between specialist and general medical perspectives.

Keywords—General practice, thoracodynia, diagnosis thinking, diagnosis and treatment thinking, treatment strategy, general practitioner, general practice medicine.

I. INTRODUCTION

Thoracodynia mainly refers to pain and discomfort in the anterior chest area. Patients often complain of dull pain, tightness, burning, acupuncture like pain, squeezing, tearing like pain, slashed pain, etc., as well as some symptoms that are difficult to describe, the location of thoracodynia generally refers to the range from the neck to the lower end of the thorax, sometimes radiating to the maxillofacial, teeth and throat, shoulder and back, upper limbs or upper abdomen [38] [39]. Thoracodynia is caused by stimulation of nerve endings innervating trachea, bronchus, heart and aorta, including radiation pain, the causes of thoracodynia are common in inflammatory diseases, ischemic diseases, tumors, trauma, mechanical compression, physical and chemical factors, autonomic nervous dysfunction, reflex or involvement of adjacent organ diseases, etc. [57].

1%~2% of the patients coming to the outpatient clinic mainly complained of thoracodynia although most causes of thoracodynia are non-cardiac, heart disease is still the leading cause of death in the United States [60]. Therefore, it is necessary to judge the severity, benign and malignant of the cause of thoracodynia, it is also very important to diagnose and predict the problem when making judgments [60].

The causes of thoracodynia are complex, and the severity of the disease varies, fatal thoracodynia can threaten the lives

of patients. Community general practitioners are the "gatekeepers" of residents' health, and often the first doctors for patients with thoracodynia, it is important to master the diagnostic skills of thoracodynia [3].

Thoracodynia is one of the common clinical symptoms. In addition to thoracodynia caused by obvious trauma, there are thoracodynia caused by chest wall lesions, chest organ diseases, shoulder joint and its surrounding tissue diseases [78]. Thoracodynia of very few patients is not caused by the above reasons, it is easy to be confused or misdiagnosed in diagnosis, thoracodynia caused by costal cartilage calcification is one of them clinically, we have made a comparative analysis of this kind of cases from clinical and imaging aspects for more than ten years, and obtained the above views [78].

Characteristics of thoracodynia [32]

- ◆ Pain incentives
- ◆ Painful parts
- ◆ Nature of pain
- ◆ Duration of pain
- ◆ Whether there is radiation pain or complications

Cause of thoracodynia [32]

- ✓ Cardiogenic
- ✓ Pulmonary origin
- ✓ Aortic dissection
- ✓ Gastrointestinal origin
- ✓ Banded scar rash
- ✓ Unclear reasons, etc

Thoracodynia that occurs in the chest and chest region. Common diagnosis: skin herpes zoster, costal chondritis of chest wall, shoulder disease, intercostal injury, spinal nerve root compression, breast lesions, malignant metastatic lesions of chest wall, pneumothorax of lung, pulmonary embolism, pneumonia, pleural disease, connective tissue disease, malignant tumour [41].

Thoracodynia is a common reason for patients to visit the emergency department, the condition is complex, often involving multiple organs and systems, and the severity of the disease varies, its efficacy and prognosis are time dependent [70].

Thoracodynia is a common symptom in the community, which is generally caused by chest diseases, the severity of thoracodynia is not necessarily related to the cause of thoracodynia, for example, chest herpes zoster can cause severe thoracodynia, while thoracodynia in acute myocardial infarction is sometimes not very serious [75]. Therefore, patients with thoracodynia should be carefully examined to

find the cause of thoracodynia as far as possible and timely diagnosed and treated [75].

II. GENERAL PRACTICE - SPECIALIST

When a general practitioner sees a patient and complains of thoracodynia, dull pain, no radiation pain, no chest tightness, shortness of breath, no history of hypertension, diabetes, coronary heart disease and so on, many doctors will choose to give ECG, chest imaging and myocardial enzyme spectrum examination first to rule out cardiovascular diseases, such as angina pectoris and myocardial infarction, in addition, pneumothorax or aortic dissection should also be considered [74].

Specialists' clinical analysis thinking of general practice medicine is a prerequisite for reducing clinical misdiagnosis [101].

III. DISCUSSION

Patients with thoracodynia who are negative in coronary angiography are collectively referred to as non-specific chest pain (NSCP) when they still cannot find a clear cause of physical disease after repeated examinations, at present, there is no effective method to identify NSCP, and they are mainly excluded by coronary angiography, but coronary angiography is invasive and expensive [6].

The mental health of coronary heart disease patients with recurrent thoracodynia after PCI and CABG is relatively poor. The main problems include more negative emotions, weakened cognitive function and lower self-evaluation when formulating comprehensive rehabilitation plans for patients with coronary heart disease, psychological intervention should be targeted [68].

The main pain sites of patients with digestive thoracodynia are the posterior sternum and precordial region [22]. Many cases are similar to cardiogenic thoracodynia, especially those patients with abnormal ECG performance, the symptoms and signs are more easily confused, which is easy to lead to misdiagnosis, by analyzing the specific performance of digestive thoracodynia itself, and without gastroscopy, digestive thoracodynia can be diagnosed efficiently by means of ECG, color ultrasound, physical examination, interrogation, and exploratory medication, the etiology of patients with digestive thoracodynia is complex, for basic level hospitals that do not have special examination items such as barium meal examination and gastroscopy, we can analyze the clinical symptoms and signs of patients when they visit the hospital, use color ultrasound, electrocardiogram and other auxiliary examination items, and take advantage of the advantages of general diagnosis and treatment to judge the condition more timely and effectively, so as to ensure that patients can get effective treatment before the diagnosis of special examination [22].

Patients with thoracodynia have a high incidence of anxiety and depression, however, the correlation between anxiety and depression, coronary artery disease, and the cause of thoracodynia in patients with thoracodynia is not very clear [24]. Patients with thoracodynia have a high incidence of

anxiety and depression, high life pressure, less social support, long duration of thoracodynia, multiple symptoms, and insomnia, patients with thoracodynia need to be alert to the possibility of anxiety and depression [24].

The cause of non-traumatic thoracodynia in male and female emergency department is mainly cardiogenic thoracodynia, the proportion of older male patients is higher than that of female patients, and most of them have a history of smoking and drinking, such patients should be treated timely and accurately according to the characteristics of the disease during clinical diagnosis and treatment [32].

Non cardiac chest pain (NCCP) refers to thoracodynia that has nothing to do with coronary artery disease, that is, so-called negative coronary angiography thoracodynia. The causes include: esophagogenic thoracodynia, peptic ulcer, mental disorder, intercostal neuritis, pleuritis and other diseases of local muscle, fascia and cartilage of chest wall. The most common cause is esophageal disease, accounting for 50%~87%, which is called esophagogenic thoracodynia, and gastroesophageal reflux disease (GERD) accounts for the majority [102].

The early symptoms of esophageal cancer are atypical, and it is difficult to distinguish the patients with thoracodynia as prominent symptoms from those with cardiogenic thoracodynia such as coronary heart disease and angina pectoris, which may lead to misdiagnosis and mistreatment [69].

Calcium sensitive receptors are more valuable than cTnI in diagnosing acute myocardial infarction within 4 hours of thoracodynia [44].

Sometimes, some people have sudden pain in the chest area, so they highly suspect angina pectoris and fear that they have coronary heart disease. Angina pectoris must be identified and treated in time, once it exceeds 15 minutes, it may develop into myocardial infarction, but not all thoracodynia is angina pectoris. Angina attack is most common in men over 40 years old and postmenopausal women, especially those with hypertension, diabetes, hyperlipidemia and smoking; those with a family history of coronary heart disease, myocardial infarction, hypertension, diabetes, hyperlipidemia and so on are also high-risk groups [76].

IV. CONCLUSION

An American study found that more than 8 million patients go to the emergency department every year due to acute thoracodynia, and only 10% of them are finally diagnosed with acute coronary syndrome (ACS) before there is no exact evidence of ACS, clinicians tend to diagnose ACS, and observe and treat patients according to ACS; in another study involving 10689 patients, 2.2% of patients who showed acute thoracodynia and were finally diagnosed as ACS were misdiagnosed [89]. Therefore, in order to avoid misdiagnosis, missed diagnosis and unnecessary medical waste, it is very important to find appropriate evaluation tools. HEART score is a scoring tool for acute thoracodynia that is widely used in emergency department at present, with high specificity and

sensitivity [89].

The treatment of patients with acute thoracodynia (especially acute coronary syndrome) is one of the clinical difficulties, how to carry out rapid risk stratification and treatment for patients with acute thoracodynia, and how to reduce both the risk of patients and the cost of treatment for patients, has become increasingly important to investigate its clinical countermeasures [50].

The patients who went to the "Chest Pain Center" for acute thoracodynia were mainly cardiovascular thoracodynia diseases, with the highest proportion of coronary heart disease, followed by respiratory diseases [70]. Spring is the season of high incidence of cardiovascular diseases, attention should be paid to strengthening warmth preservation and improving the awareness of cardiovascular disease prevention, early morning is the time of high incidence of cardiovascular diseases, attention should be paid to diagnosis and differential diagnosis to prevent missed diagnosis and misdiagnosis, early interventional treatment is beneficial to improve the clinical prognosis and reduce the mortality of patients with cardiovascular thoracodynia [70].

The cooperative transfer mode between community health service centers and regional thoracodynia centers can improve the transfer time and goal kick time of patients with acute myocardial infarction in the community [34].

From the perspective of general practitioners, this paper focuses on the classification of causes of thoracodynia, the characteristics of common fatal thoracodynia, and the diagnostic process of thoracodynia, so that general practitioners can form a clear diagnostic thinking, identify patients with critical and severe thoracodynia, find the causes of thoracodynia, formulate the best treatment strategy for the causes, and protect the health of residents [3].

ACKNOWLEDGMENT

Thanks to the teachers of the General Medicine Department of the First Affiliated Hospital at China Medical University.

REFERENCES

[1] ALISTAIR, H. 2004. A 42-year-old male patient with acute thoracodynia: patient's opinion and doctor's comments: comments: problems in general practice (in Chinese). *British Medical Journal Chinese Edition*, 7, 186.

[2] L, B., E, C. L.&A, W. R. T. 2018. Management of patients with thoracodynia in general practice: an interview study (in Chinese). *Chinese General Practice*, 2483.

[3] Cai F y, Yang J & Wu J, 2018. General diagnosis of thoracodynia (in Chinese). *Chinese General Medicine*, 21, 114-118.

[4] Chen J Y, Zhao K, Huo Y, Li Ch J & Sui B Y, 2020. Research on the influence of different thoracodynia center models in Tianjin on the diagnosis and treatment of patients with acute ST segment elevation myocardial infarction (in Chinese). *Chinese Journal of General Practice*, 23, 3615-3619.

[5] Dai H M, Zhu X Zh, Gu J & Du Zh H, 2015. Analysis of general practice diagnosis and treatment thinking of a thoracodynia case to be investigated (in Chinese). *Chinese Journal of General Practitioners*, 14, 317-318.

[6] Ding F, Guo L, Liu X, Zhao X Sh, Si Q G W & Zhang J, 2020. Study on the identification of patients with non-specific thoracodynia before coronary angiography (in Chinese). *Chinese General Practice*, 23, 289-

293.

[7] Li K, Gong J & Wang X G, 2021. Treatment experience of patients with acute ST segment elevation myocardial infarction transferred by the network hospital of thoracodynia center (in Chinese). *Chinese Community Physician*, 37, 57-58.

[8] Liu Y Sh & Zhu J H, 2014. Clinical diagnosis and treatment thinking of general practitioners from a case of acute thoracodynia Proceedings of the 17th National Annual Conference of Emergency Medicine, Emergency Medicine Branch, Chinese Medical Association Xining (in Chinese).

[9] Liu Y Sh & Zhu J H, 2014. Clinical diagnosis and treatment thinking of general practitioners from a case of acute thoracodynia Proceedings of the 17th National Annual Conference of Emergency Medicine, Emergency Medicine Branch, Chinese Medical Association Xining (in Chinese).

[10] Luo Y, Liu D, Ji Ch L, Yang J R, Shi L L & Hu L Y, 2021. The effect of optimizing the nursing process of emergency nurses under the model of thoracodynia center on the treatment of patients with acute ST segment elevation myocardial infarction (in Chinese). *General Care*, 19, 83-86.

[11] Ma L & Wang Ch, 2019. General practice clinical diagnosis and treatment thinking series - thoracodynia (in Chinese). *Journal of Clinical Pharmacotherapy*, 17, 16-19, 27.

[12] Peng R L, 2011. Analysis on the general practice thinking mode of coronary heart disease diagnosis and treatment in Anzhen General Practice Base of the 4th Beijing General Practitioner Backbone Training (in Chinese). *Chinese Journal of Aesthetic Medicine*, 20, 22-23.

[13] Si C X, 2021. Nursing experience of improving the comprehensive ability of nursing staff by building a grass-roots thoracodynia center (in Chinese). *Home has pregnancy treasure*, 3, 250.

[14] Wang Ch & Wang Zh, 2020. General practice clinical diagnosis and treatment thinking series - thoracodynia (in Chinese). *Kang Yi*, 198.

[15] Wang Zh M, Chen W H, Yin R L, Cheng G Q, Ye F L & Wu Y M, 2021. Analysis of the effect of improving the county "thoracodynia center" collaborative treatment system on the treatment and prognosis of patients with acute ST segment elevation myocardial infarction (in Chinese). *Knowledge of cardiovascular disease prevention*, 11, 36-39.

[16] Xu X P, Wang H, Cui C Y, Zhang Y M, Li S Y, Zhu F, Ye T & Cai L, 2020. Guidelines for the treatment of non-ST segment elevation acute coronary syndrome under the management model of Chengdu Thoracodynia Center - Study on the practice gap and its influencing factors (in Chinese). *Chinese General Practice*, 23, 3040-3046.

[17] Zhang X, Yao Y, Chen F, Cui T T, Ye L, Li M & Li H P, 2021. Job competency analysis of internal medicine nurses in the construction center of chest pain center (in Chinese). *General Care*, 19, 1820-1823.

[18] Zhao J H, Zhao F Y, Jiang Y & Wang H, 2021. General diagnosis, treatment and management of a patient with thoracodynia, obesity and poor blood glucose control (in Chinese). *Chinese Journal of General Practitioners*, 20, 1016-1019.

[19] Zhao M Zh & Hu D Y, 2003. The role of general practitioners and medical networks in the diagnosis and treatment of acute thoracodynia (in Chinese). *Chinese Journal of General Practitioners*, 2, 85-86.

[20] Zhi X, Wang Y B & Zhang L Y, 2015. The significance of special education on the diagnosis and treatment of acute thoracodynia in the training of general practitioners (in Chinese). *Medical Research and Education*, 102-104.

[21] Zeng D Y, Lin Z P, Wen G X, Wang H & Huang Q F, 2014. Application of SOAP method in emergency triage of acute thoracodynia (in Chinese). *Modern Distance Education of Chinese Medicine*, 12, 101-102.

[22] Chen D, 2020. Analysis of clinical characteristics and differential diagnosis value of patients with digestive thoracodynia (in Chinese). *CME*, 34, 85-87.

[23] Chen L, Huang Y J, Zhang X M & Zhang H Y, 2020. Clinical practice of hospital qualification certification for emergency thoracodynia specialist nurses (in Chinese). *General Care*, 18, 3784-3787.

[24] Han B B, Li Y G, Li Sh, Zhang Y L, Li J B, Wei M & Shen Ch X, 2018. Study on the occurrence of anxiety and depression in patients with thoracodynia and its influencing factors (in Chinese). *Chinese Journal of General Practice*, 21, 4515-4520.

[25] Pang D, Chen L X, Chen R, Huang G Ch & Xiong X J, 2020. Optimize the STEMI processing flow in the chest pain center to affect the treatment time of emergency PCI patients in primary hospitals (in Chinese). *General Care*, 18, 4431-4433.

- [26] Peng H H, Pan H F, Xin Z Y & Pan Q, 2020. The influence of self-made thoracodynia treatment flow chart and dialogue tool on factors related to readmission of patients with unstable angina pectoris (in Chinese). *General Care*, 18, 4790-4792.
- [27] Qiao H H, 2017. Talk about general practitioner's consultation from a case of subacute thyroiditis (in Chinese). *Shanghai Pharmaceutical*, 38, 33-34.
- [28] Ran W, Li H Q & Zhong Z D, 2020. Research on the influence of the green channel information system combined with triage nursing on the self-efficacy of thoracodynia patients (in Chinese). *General Care*, 18, 3980-3982.
- [29] Su H H, Wang Y, Wang Sh M, He P P, Liu Y T, Liu J & Wang W Sh, 2019. Qualitative study on the experience of emergency nurses in triage of patients with non-traumatic thoracodynia in emergency (in Chinese). *General Care*, 17, 4320-4323.
- [30] Wang L, Han Zh Y & Qiu Ch G, 2012. Coronary angiography analysis of patients with thoracodynia and chronic renal insufficiency (in Chinese). *Chinese Journal of General Practice*, 15, 2342-2344.
- [31] Wang Q, Liu H L, Meng H Y, Jia J, Zhan Y Y & Zhou L, 2018. Exploration of the hybrid teaching model based on "rain classroom" in the continuing education of general practice medicine (in Chinese). *Education and Teaching Forum*, 95-96.
- [32] Wen X Q, Zheng B & Tang Y L, 2016. Clinical characteristics and etiological analysis of emergency non traumatic thoracodynia patients of different genders (in Chinese). *Chinese General Practice*, 19, 3607-3610.
- [33] Wu L Y & Qian S L, 2019. Impact of chest pain center on emergency care of patients with acute ST segment elevation myocardial infarction (in Chinese). *General Care*, 17, 3268-3270.
- [34] Xi W Ch, Fan M G & Dong X W, 2020. Effect of community chest pain center cooperation mode on transport and goal kick time of patients with acute myocardial infarction (in Chinese). *Shanghai Pharmaceutical*, 41, 38-39, 46.
- [35] Yang H, Gao Y J, Zhang Q Y & Zhao Y, 2019. Application of logo management in the establishment of chest pain center (in Chinese). *Journal of General Stomatology (electronic edition)*, 6, 181-182.
- [36] Yu Ch & Jiang Y, 2016. Experience in training in-service general practitioners to apply evidence-based medicine skills by using the case discussion model (in Chinese). *Chinese General Practice*, 19, 2738-2741.
- [37] The Chinese Medical Association, the Clinical Pharmacy Branch of the Chinese Medical Association, the Journal Office of the Chinese Medical Association, the General Practitioner Branch of the Chinese Medical Association, the Editorial Committee of the Chinese Journal of General Practitioners of the Chinese Medical Association and the Expert Group for the Preparation of Guidelines for Rational Use of Drugs in Primary Medical and Health Institutions 2021. Guidelines for Rational Use of Drugs in the Basic Layer of Thoracodynia (in Chinese). *Chinese Journal of General Practitioners*, 20, 290-301.
- [38] 2019. The Chinese Medical Association, the Journal Office of the Chinese Medical Association, the General Practitioner Branch of the Chinese Medical Association, the Editorial Committee of the Chinese Journal of General Practitioners of the Chinese Medical Association & the Expert Group for the Preparation of Guidelines for Primary Diagnosis and Treatment of Cardiovascular Diseases 2019. The Guidelines for Primary Diagnosis and Treatment of Thoracodynia (in Chinese). *Chinese Journal of General Practitioners*, 18, 913-919.
- [39] 2019. The Chinese Medical Association, the Journal Office of the Chinese Medical Association, the General Practitioner's Branch of the Chinese Medical Association, the Editorial Committee of the Chinese Journal of General Practitioners of the Chinese Medical Association and the Expert Group for the Preparation of Guidelines for Primary Diagnosis and Treatment of Cardiovascular Diseases (in Chinese). *Chinese Journal of General Practitioners*, 18, 920-924.
- [40] Zhou Zh H, Huang W J, Jin Sh H, Guo J Zh & Chen Sh Y, 2012. Study on the prevalence, diagnosis and treatment of mental disorders in general medical clinics of general hospitals (in Chinese). *Chinese Journal of General Practice*, 15, 2942-2945.
- [41] 2006. Thoracodynia (in Chinese). *Chinese Journal of General Practice*, 9, 1078-1079.
- [42] 2020. Simulated Volume IV of Rural General Practicing Assistant Physician Examination (in Chinese). *Chinese Journal of Practical Rural Doctors*, 27, 78-80.
- [43] J. BROWN, S. & Zhou Sh X, 2006. General practitioners' notes -- Dr. Brown's diary (in Chinese). *Chinese General Practice*, 9, 694-694.
- [44] Chen H B, Pan H H, Huang M D, Shen W F, Zou H X, Shao P Y, Zhai Ch L & Wu H J, 2020. The application value of calcium sensitive receptor determination in the diagnosis of myocardial infarction within 4 hours of thoracodynia (in Chinese). *General Practice and Education*, 18, 604-606.
- [45] Hong L, 2016. Comparative study on the clinical characteristics of community-acquired pneumonia in the elderly and young adults in general practice (in Chinese). *Journal of Mathematical Medicine*, 29, 1788-1789.
- [46] Li J, Shang K P & Lu B, 2021. Application of clinical grading nursing based on GRACE scoring system in patients with acute coronary syndrome thoracodynia (in Chinese). *General Care*, 19, 1786-1789.
- [47] Li Y D, Sun Q, Hu G Y, Xu H, Cheng X Q, Li Q, Lv W K & Xu Q, 2009. Study on the correlation between creatine kinase isoenzyme and heart type fatty acid binding protein in patients with cardiogenic thoracodynia (in Chinese). *Chinese Journal of General Practice*, 12, 1756-17581761.
- [48] Liang W N & Wang C L, 2003. Thoracodynia *Chinese General Practice*, 6, 184-188.
- [49] Mao J R, 2018. Analysis of clinical diagnosis and treatment of emergency patients with acute thoracodynia *Electronic (in Chinese). Journal of Cardiovascular Diseases of Integrated Traditional Chinese and Western Medicine*, 6, 189-190.
- [50] Rong Q F & Su En B, 2002. Risk stratification and clinical countermeasures of acute thoracodynia (in Chinese). *Chinese General Practice*, 5, 999-1003.
- [51] Wang M X, 2012. Analysis of the relationship between physical exercise and thoracodynia in 230 patients with coronary heart disease in the community (in Chinese). *Seek medical advice (Academic Edition)*, 10, 1049-1050.
- [52] Wang Y Y & Li J Sh, 2011. A report of 11 cases of cervicogenic thoracodynia (in Chinese). *Chinese Medical Sciences*, 1, 179-179183.
- [53] Xing Y, Zhang Y L, Song Ch G & Wang W Q, 2006. Fever, thoracodynia, abdominal pain, anemia (in Chinese). *Chinese General Practice*, 9, 305-306.
- [54] Xu X, 2019. Survey and analysis of common symptoms in the community and training needs of general practitioners (in Chinese). *Enterprise Health in Urban and Rural China*, 34, 84-86.
- [55] Yang J H, Xie L F, Liu X Zh, Wang H Y & Xie H Zh, 2018. Application of clinical nursing process optimization in nursing management of grass-roots chest pain centers (in Chinese). *General Care*, 16, 2475-2477.
- [56] Yang J, 2006. Gastroesophageal reflux disease and non-cardiogenic thoracodynia (in Chinese). *China General Practice*, 9, 2025-2026.
- [57] Zhang J H & Gai Z K, 2004. Diagnostic thinking and clinical practice of acute non traumatic fatal thoracodynia (in Chinese). *Chinese General Medicine*, 7, 1834-1835.
- [58] Zhang W X & Li B, 2018. Evaluation of emergency nursing effect for patients with acute thoracodynia (in Chinese). *Electronic Journal of General Stomatology*, 5, 145147.
- [59] Zhang Y J & Chen X, 2010. The concept of "health management" and "health agent" in general medical services (in Chinese). *Chinese General Practice*, 13, 1752-1754.
- [60] Zhou Sh X & Yang Q, 2006. Etiological diagnosis of thoracodynia (in Chinese). *Chinese General Practice*, 9, 124-126.
- [61] 2016. Medical News - ACC2016: Do Patients Need to Participate in Thoracodynia Treatment Decisions (in Chinese). *Chinese Journal of General Practice*, 19, 1721-1721.
- [62] Compilation of WONCA Research Papers - Diagnostic Indicators of Non cardiovascular Thoracodynia: Systematic Review and Meta analysis (in Chinese). *Chinese General Practice*, 20, 1151.
- [63] P, S. 2014. Imaging diagnosis of heart disease: Australian general practice guide (in Chinese). *Chinese General Practice*, 3779-3781.
- [64] Chen H J & Wei Zh B, 2005. Clinical analysis of 60 cases of non-cardiogenic thoracodynia (in Chinese). *Practical General Practice*, 3, 454.
- [65] Feng G, 2005. Pre hospital risk assessment and Levin's sign of thoracodynia (in Chinese). *Chinese General Practice*, 8, 509.
- [66] Gu J, PETER, BURGOS&MD, 2010. Clinical treatment of a patient with blunt chest injury by a general practitioner (in Chinese). *Chinese General Practice (Doctor Reader Edition)*.
- [67] Li W H & Chen J G, 2000. Analysis of 7 cases of misdiagnosis of thoracodynia (in Chinese). *Chinese General Practice*, 3, 367.

- [68] Liang J R, Liu W F, Nan F & Wang L, 2009. Comparison of mental health status between coronary heart disease patients with recurrent thoracodynia after percutaneous coronary intervention and coronary artery bypass grafting and normal population (in Chinese). *Chinese General Medicine*, 12, 1945-1946/1949.
- [69] Ma P F, 2003. Analysis of 17 cases of esophagogenic thoracodynia misdiagnosed as cardiogenic thoracodynia (in Chinese). *Chinese Journal of General Practice*, 6, 739-739.
- [70] Shi Q, 2018. Analysis of clinical characteristics of patients with acute thoracodynia Master, Tianjin Medical University (in Chinese).
- [71] Xie M R, Chen H, Yu J M, Wang X, Yang J Sh & Shen L H, 2000. Clinical characteristics of hypertensive patients with normal coronary angiography but thoracodynia (in Chinese). *Chinese General Practice*, 3, 440-442.
- [72] Xing Y, Zhang Y L & Qiang H B, 2008. Sudden thoracodynia, chest tightness and abdominal distension (in Chinese). *Chinese General Medicine*, 11, 134-135.
- [73] Xu Zh, Ma Sh R, Zhu Y & Chen M, 2016. Study on the relationship between myocardial microcirculation and microalbuminuria in patients with hypertension and thoracodynia (in Chinese). *Chinese Journal of General Practice*, 19, 1161-1164.
- [74] Xu J, 2017. Targeted consultation to find the cause of thoracodynia (in Chinese). *Physician Online*, 7, 21-22.
- [75] Yang X Ch, 2004. Key points of diagnosis and treatment of thoracodynia (in Chinese). *General Practice and Education*, 2, 140-141/158.
- [76] Yu Y Q, 2020. What is the difference between thoracodynia and angina pectoris (in Chinese). *Everyone is healthy*, 32.
- [77] Zhang Sh N, 2004. Chest tightness, thoracodynia, shortness of breath, night sweat and dry cough (in Chinese). *Chinese General Practice*, 7, 399.
- [78] Zhao F, Hu W X & Song W G, 2003. Clinical analysis of 31 cases of thoracodynia caused by rib calcification (in Chinese). *General Practice and Education*, 1, 42-42.
- [79] Zhou Sh X, 2004. General practitioners' notes - Dr. Brown's diary (in Chinese). *Chinese General Practice*, 7, 1571.
- [80] Zhu M & Shen H, 2006. Thoracodynia, dyspnea and low fever (tuberculous pleurisy) (in Chinese). *Chinese General Practice*, 9, 478-479.
- [81] 2007. Guidelines for medical treatment of abdominal and thoracodynia (in Chinese). *General Care*, 50-51.
- [82] SINGHS & Meng Z L, 2001. Asthmatic diffuse thoracodynia (in Chinese). *General practitioners*, 010, 42.
- [83] Cao M Zh & Qiao Z Y, 2020. Effect of regional collaborative rescue system on rescue efficiency and short-term prognosis of patients with acute ST segment elevation myocardial infarction (in Chinese). *Chinese General Practice*, 23, 784-788.
- [84] Cheng L Ch, Zhou M G, He D, Tong L, Zhang C, Wang Y F & Cai L, 2021. Research on the diurnal difference in the treatment efficiency of acute myocardial infarction and the difference between non-working days and working days (in Chinese). *Chinese Journal of General Practice*, 24, 285-291.
- [85] Ding T J, Guo D F & Liu G R, 2017. Diagnosis and treatment status and development prospect of acute thoracodynia (in Chinese). *Chinese General Practice*, 228-229.
- [86] Fang D & Ye Y, 2009. Is thoracodynia a heart disease (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 5-7.
- [87] Hu R, 2011. Pay attention to patients with high-risk thoracodynia and treat them according to different levels (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 27-29.
- [88] Li J X & Yao M, 2016. A case of supradiaphragmatic esophageal diverticulum with thoracodynia and literature review Proceedings of 2016 General Practice Conference, the 14th Annual Academic Conference of General Practice Branch of Chinese Medical Association, and the 2016 Annual Academic Conference of Zhejiang General Practice Hangzhou (in Chinese).
- [89] Li K J, Wu C C, Xiao L M, Xu J, Ji S Y, Yang K Ch & Ye L, 2021. Clinical application of myocardial injury markers and HEART score in acute coronary syndrome (in Chinese). *Zhejiang Journal of Integrated Traditional and Western Medicine*, 31, 726-729.
- [90] Liu M Y, 2011. Psychological problems of patients with thoracodynia (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 14, 44-45.
- [91] Liu M Y & Duan X Ch, 2013. Psychological problems of patients with paroxysmal thoracodynia (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 20-22.
- [92] Ni F H, Qu B M, Chen X & Wu Sh Ch, 2019. Diagnosis and treatment of a case of spontaneous coronary artery dissection and literature review (in Chinese). *Chinese Journal of General Practice*, 22, 1746-1750.
- [93] Shi D M, 2012. Bursts of chest tightness and thoracodynia occurred for more than 5 years and worsened for 1 week (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 15, 32-34.
- [94] Wang Y Sh & Zhang X H, 2013. Shexiang Baoxin Pill improved thoracodynia after coronary stent implantation in one case (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 16, 77-78.
- [95] Xia S L, 2003. Analysis of clinical characteristics of acute myocardial infarction without typical thoracodynia (in Chinese). *Chinese Journal of General Medicine*, 2, 79-79.
- [96] Xie P Y, 2011. Esophageal thoracodynia and angina caused by gastroesophageal reflux (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 14, 31-32.
- [97] 2021. The Chinese Medical Association, the Clinical Pharmacy Branch of the Chinese Medical Association, the Journal Office of the Chinese Medical Association, the General Practitioner Branch of the Chinese Medical Association, the Editorial Committee of the Chinese Journal of General Practitioners of the Chinese Medical Association and the Expert Group for the Preparation of Guidelines for Rational Use of Drugs in Grassroots Medical and Health Institutions 2021. Guidelines for Rational Use of Drugs in Grassroots of Supraventricular Tachycardia (in Chinese). *Chinese Journal of General Practitioners*, 20, 435-440.
- [98] Zhou P Ch, 2007. Interpretation of the cause of thoracodynia (in Chinese). *General Care*, 49-52.
- [99] Zhou Sh X, 2013. Thoracodynia (in Chinese). *Chinese General Practice (Doctor Reader Edition)*, 64.
- [100] Zhu W H, 2016. From a patient with thoracodynia to see medication education Proceedings of the Third Cross Strait General Practice Conference Shenzhen (in Chinese).
- [101] Kong X Y, Yin M X, Sun J X, 2003. Clinical characteristics and misdiagnosis analysis of 29 cases of rickettsia tsutsugamushi pneumonia (in Chinese). *Guangdong Medical Journal*, 24 (8): 845-846
- [102] Yang J, 2006. Gastroesophageal reflux disease and non-cardiogenic thoracodynia (in Chinese). *China General Practice*, 9, 2025-2026.