## Contents

**Thrice Monthly Volume 10 Number 11 April 16, 2022**

### REVIEW

3321 Encouraging specific biomarkers-based therapeutic strategies for hepatocellular carcinoma

*Yao M, Yang JL, Wang DF, Wang L, Chen Y, Yao DF*

### ORIGINAL ARTICLE

#### Clinical and Translational Research

3334 Autophagy-related long non-coding RNA prognostic model predicts prognosis and survival of melanoma patients


3352 Identification of circ_0000375 and circ_0011536 as novel diagnostic biomarkers of colorectal cancer

*Yin TF, Du SY, Zhao DY, Sun XZ, Zhou YC, Wang QQ, Zhou GYJ, Yao SK*

### Retrospective Study

3369 Echocardiography in the diagnosis of Shone’s complex and analysis of the causes for missed diagnosis and misdiagnosis

*Li YD, Meng H, Pang KJ, Li MZ, Xu N, Wang H, Li SJ, Yan J*

3379 Predictors and prognostic impact of post-operative atrial fibrillation in patients with hip fracture surgery

*Bae SJ, Kwon CH, Kim TY, Chang H, Kim BS, Kim SH, Kim HJ*

3389 Added value of systemic inflammation markers for monitoring response to neoadjuvant chemotherapy in breast cancer patients

*Ke ZR, Chen W, Li MX, Wu S, Jin LT, Wang TJ*

3401 Washed microbiota transplantation reduces serum uric acid levels in patients with hyperuricaemia

*Cai JR, Chen XW, He YJ, Wu B, Zhang M, Wu LH*

### Clinical Trials Study

3414 Concurrent chemoradiotherapy using gemcitabine and nedaplatin in recurrent or locally advanced head and neck squamous cell carcinoma


### META-ANALYSIS

3426 Effect of enhanced recovery after surgery on inflammatory bowel disease surgery: A meta-analysis

*Peng D, Cheng YX, Tao W, Tang H, Ji GY*

3436 Accuracy of ultrasound elastography for predicting breast cancer response to neoadjuvant chemotherapy: A systematic review and meta-analysis

*Chen W, Fang LX, Chen HL, Zheng JH*
CASE REPORT

3461 Circulating tumor DNA genomic profiling reveals the complicated olaparib-resistance mechanism in prostate cancer salvage therapy: A case report

3472 Difference and similarity between type A interrupted aortic arch and aortic coarctation in adults: Two case reports
Ren SX, Zhang Q, Li PP, Wang XD

3478 Combination therapy (toripalimab and lenvatinib)-associated toxic epidermal necrolysis in a patient with metastatic liver cancer: A case report
Huang KK, Han SS, He LY, Yang LL, Liang BY, Zhen QY, Zhu ZB, Zhang CY, Li HY, Lin Y

3485 Unusual glomus tumor of the lower leg: A case report
Wang HY, Duan P, Chen H, Pan ZY

3490 Pulmonary Cladosporium infection coexisting with subcutaneous Corynespora cassiicola infection in a patient: A case report
Wang WY, Luo HB, Hu JQ, Hong HH

3496 Preoperational diagnosis and management of breast ductal carcinoma in situ arising within fibroadenoma: Two case reports
Wu J, Sun KW, Mo QP, Yang ZR, Chen Y, Zhong MC

3505 Reconstruction of complex chest wall defects: A case report
Huang SC, Chen CY, Qiu P, Yan ZM, Chen WZ, Liang ZZ, Luo KW, Li JW, Zhang YQ, Huang BY

3511 Young children with multidrug-resistant epilepsy and vagus nerve stimulation responding to perampanel: A case report
Yang H, Yu D

3518 Intramedullary nailing for pathological fractures of the proximal humerus caused by multiple myeloma: A case report and review of literature
Xu GQ, Wang G, Bai XD, Wang XJ

3527 Double tracheal stents reduce side effects of progression of malignant tracheoesophageal fistula treated with immunotherapy: A case report
Li CA, Yu WX, Wang LY, Zou H, Ban CJ, Wang HW

3533 Ankylosing spondylitis complicated with andersson lesion in the lower cervical spine: A case report

3541 Severe gastric insufflation and consequent atelectasis caused by gas leakage using AIR-Q laryngeal mask airway: A case report
Zhao Y, Li P, Li DW, Zhao GF, Li XY
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>3547</td>
<td>Hypereosinophilic syndrome presenting as acute ischemic stroke, myocardial infarction, and arterial involvement: A case report</td>
<td>Sun RR, Chen TZ, Meng M</td>
</tr>
<tr>
<td>3553</td>
<td>Cytochrome P450 family 17 subfamily A member 1 mutation causes severe pseudohermaphroditism: A case report</td>
<td>Gong Y, Qin F, Li WJ, Li LY, He P, Zhou XJ</td>
</tr>
<tr>
<td>3573</td>
<td>Qingchang decoction retention enema may induce clinical and mucosal remission in left-sided ulcerative colitis: A case report</td>
<td>Li PH, Tang Y, Wen HZ</td>
</tr>
<tr>
<td>3587</td>
<td>Ultrasound-guided local ethanol injection for fertility-preserving cervical pregnancy accompanied by fetal heartbeat: Two case reports</td>
<td>Kakinuma T, Kakinuma K, Matsuda Y, Ohwada M, Yanagida K, Kaijima H</td>
</tr>
<tr>
<td>3593</td>
<td>Successful apatinib treatment for advanced clear cell renal carcinoma as a first-line palliative treatment: A case report</td>
<td>Wei HP, Mao J, Hu ZL</td>
</tr>
<tr>
<td>3601</td>
<td>Del(5q) and inv(3) in myelodysplastic syndrome: A rare case report</td>
<td>Liang HP, Luo XC, Zhang YL, Liu B</td>
</tr>
<tr>
<td>3609</td>
<td>Papillary thyroid microcarcinoma with contralateral lymphatic skip metastasis and breast cancer: A case report</td>
<td>Ding M, Kong YH, Gu JH, Xie RL, Fei J</td>
</tr>
<tr>
<td>3615</td>
<td>Contrast-enhanced ultrasound manifestations of synchronous combined hepatocellular-cholangiocarcinoma and hepatocellular carcinoma: A case report</td>
<td>Gao L, Huang JY, Lu ZJ, Lu Q</td>
</tr>
<tr>
<td>3624</td>
<td>Thyrotoxicosis after a massive levothyroxine ingestion: A case report</td>
<td>Du F, Liu SW, Yang H, Duan RX, Ren WX</td>
</tr>
<tr>
<td>3630</td>
<td>Pleomorphic adenoma of the left lacrimal gland recurred and transformed into myoepithelial carcinoma after multiple operations: A case report</td>
<td>Huang WP, Li LM, Gao JF</td>
</tr>
</tbody>
</table>
ABOUT COVER
Editorial Board Member of *World Journal of Clinical Cases*, Chi-Yuan Yeh, MD, PhD, Assistant Professor, Chief Doctor, radiation oncology, Tungs’ Taichung MetroHarbor Hospital, Taichung 43503, Taiwan.
peteryeh46@gmail.com

AIMS AND SCOPE
The primary aim of *World Journal of Clinical Cases* (WJCC, *World J Clin Cases*) is to provide scholars and readers from various fields of clinical medicine with a platform to publish high-quality clinical research articles and communicate their research findings online.

WJCC mainly publishes articles reporting research results and findings obtained in the field of clinical medicine and covering a wide range of topics, including case control studies, retrospective cohort studies, retrospective studies, clinical trials studies, observational studies, prospective studies, randomized controlled trials, randomized clinical trials, systematic reviews, meta-analysis, and case reports.

INDEXING/ABSTRACTING
The WJCC is now indexed in Science Citation Index Expanded (also known as SciSearch®), Journal Citation Reports/Science Edition, Scopus, PubMed, and PubMed Central. The 2021 Edition of Journal Citation Reports® cites the 2020 impact factor (IF) for WJCC as 1.337; IF without journal self cites: 1.301; 5-year IF: 1.742; Journal Citation Indicator: 0.33; Ranking: 119 among 169 journals in medicine, general and internal; and Quartile category: Q3. The WJCC’s CiteScore for 2020 is 0.8 and Scopus CiteScore rank 2020: General Medicine is 493/793.

RESPONSIBLE EDITORS FOR THIS ISSUE
Production Editor: Hua-Ge Yu; Production Department Director: Xiang Li; Editorial Office Director: Jin-Lei Wang.

NAME OF JOURNAL
*World Journal of Clinical Cases*

ISSN
ISSN 2307-8960 (online)

LAUNCH DATE
April 16, 2013

FREQUENCY
Thrice Monthly

EDITORS-IN-CHIEF
Bao-Gan Peng, Jerzy Tadeusz Chudek, George Kontogeorgos, Maurizio Serati, Ja Hyeon Ku

EDITORIAL BOARD MEMBERS
https://www.wjgnet.com/2307-8960/editorialboard.htm

PUBLICATION DATE
April 16, 2022

COPYRIGHT
© 2022 Baishideng Publishing Group Inc

INSTRUCTIONS TO AUTHORS
https://www.wjgnet.com/bpg/gerinfo/204

GUIDELINES FOR ETHICS DOCUMENTS
https://www.wjgnet.com/bpg/GerInfo/287

GUIDELINES FOR NON-NATIVE SPEAKERS OF ENGLISH
https://www.wjgnet.com/bpg/gerinfo/240

PUBLICATION ETHICS
https://www.wjgnet.com/bpg/gerinfo/288

PUBLICATION MISCONDUCT
https://www.wjgnet.com/bpg/gerinfo/208

ARTICLE PROCESSING CHARGE
https://www.wjgnet.com/bpg/gerinfo/242

STEPS FOR SUBMITTING MANUSCRIPTS
https://www.wjgnet.com/bpg/gerinfo/239

ONLINE SUBMISSION
https://www.f6publishing.com

© 2022 Baishideng Publishing Group Inc. All rights reserved. 7041 Koll Center Parkway, Suite 160, Pleasanton, CA 94566, USA
E-mail: bpgoffice@wjgnet.com  https://www.wjgnet.com
Thyrotoxicosis after a massive levothyroxine ingestion: A case report

Fang Du, Shi-Wei Liu, Hua Yang, Rui-Xue Duan, Wen-Xia Ren

BACKGROUND
The literature on thyrotoxicosis caused by excessive ingestion of exogenous thyroid hormone is limited, and most cases reported have involved pediatric clinical studies.

CASE SUMMARY
A 21-year-old woman initially presented with palpitation and chest tightness after an overdose of levothyroxine (10 mg). The patient transiently lost consciousness and developed atrial fibrillation during hospitalization. We used propylthiouracil to decrease the peripheral conversion of T4 to T3 and inhibit the synthesis of endogenous thyroxine, propranolol to control heart rate, hydrocortisone to correct severe thyrotoxicosis, and hemoperfusion to increase levothyroxine clearance. The patient recovered and was discharged.

CONCLUSION
For patients with thyrotoxicosis after taking excess levothyroxine, it is critical to monitor vital signs and initiate effective treatment.

Key Words: Levothyroxine; Overdose; Thyrotoxicosis; Thyroid crisis; Treatment; Case report

©The Author(s) 2022. Published by Baishideng Publishing Group Inc. All rights reserved.
Core Tip: The literature on thyrotoxicosis caused by excessive ingestion of exogenous thyroid hormone is limited. We report a 21-year-old woman who presented with thyroid crisis after an overdose of levothyroxine. For patients with thyrotoxicosis or even thyroid storm after an overdose of levothyroxine, it is critical to monitor vital signs and symptoms and initiate effective treatment.

Citation: Du F, Liu SW, Yang H, Duan RX, Ren WX. Thyrotoxicosis after a massive levothyroxine ingestion: A case report. World J Clin Cases 2022; 10(11): 3624-3629
DOI: https://dx.doi.org/10.12998/wjcc.v10.i11.3624

INTRODUCTION
Levothyroxine is a commonly used medication for hypothyroidism. Although many patients with hypothyroidism use levothyroxine as an alternative treatment, few cases of acute overdosage have been reported worldwide[1], and a large proportion of them have involved pediatric patients. Most reported levothyroxine intoxication symptoms have been mild[2,3], but severe manifestations including hyperthermia[3], vomiting[4], cardiac arrhythmias[5], seizures[6], coma[7], and thyroid storm[7,8] have been reported to occur after massive levothyroxine overdosage.

We report herein a case of a 21-year-old woman with a history of hypothyroidism and depression who took 200 tablets of levothyroxine, more than 10 tablets of clonazepam, and 20 tablets of zolpidem after mental stimulation. She ultimately developed symptoms of thyrotoxicosis, such as arrhythmia, dyspnea, dizziness, and coma.

CASE PRESENTATION
Chief complaints
A 21-year-old woman was admitted to the emergency department with palpitations and chest tightness.

History of present illness
Fifteen hours earlier, the patient had ingested 200 levothyroxine tablets (10 mg), more than 10 clonazepam tablets (20 mg), and 20 zolpidem tablets (200 mg), after mental stimulation.

History of past illness
The patient’s parents reported that she had been diagnosed with hypothyroidism due to fatigue 3 years ago and was being treated with levothyroxine (12.5-25.0 µg/d) without thyroid function monitoring. In addition, she was diagnosed with depression 2 years previously and was taking clonazepam and zolpidem for intermittent treatment.

Personal and family history
Her family history included maternal hypothyroidism.

Physical examination
On admission, the patient was conscious, presenting with palpitations, dyspnea, dizziness, fatigue, and sweating but with no nausea, vomiting, abdominal pain, nor diarrhea. Her vital signs were a temperature of 37.3 ºC, heart rate of 103 beats/min, blood pressure of 100/73 mmHg, respiratory rate of 27 breaths/min, and oxygen saturation of 95% while breathing room air. The thyroid gland was I degree swollen, tough, and without tenderness.

Laboratory examinations
The patient’s thyroxine (T4) level was > 320 nmol/L, free thyroxine (FT4) level was > 100 pmol/L, triiodothyronine (T3) level was 6.27 nmol/L, free triiodothyronine (FT3) level was 27.96 pmol/L, thyroid stimulating hormone (TSH) level was < 0.01 mIU/mL, thyroglobulin antibody (TGAb) level was 583.4 IU/mL, thyroid peroxidase antibody (TPOAb) level was 30.8 IU/mL, and thyrotropin receptor antibody (TRAb) level was < 0.3 IU/L (Table 1). Chemistries were within normal limits, except for an alanine aminotransferase level of 74.3 U/L (normal range: 7-40 U/L).

Imaging examinations
There was no imaging examination.
Table 1 Laboratory results after levothyroxine ingestion

<table>
<thead>
<tr>
<th>Result</th>
<th>Day 1</th>
<th>Day 2</th>
<th>Day 4</th>
<th>Day 8</th>
<th>Day 14</th>
<th>Reference range</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT3 (pmol/L)</td>
<td>27.96</td>
<td>17.5</td>
<td>10</td>
<td>6.18</td>
<td>3.41</td>
<td>3.11-8.53</td>
</tr>
<tr>
<td>FT4 (pmol/L)</td>
<td>&gt; 100</td>
<td>&gt; 100</td>
<td>53.29</td>
<td>34.02</td>
<td>16.35</td>
<td>9.11-25.70</td>
</tr>
<tr>
<td>T3 (nmol/L)</td>
<td>6.27</td>
<td>3.46</td>
<td>4.84</td>
<td>—</td>
<td>—</td>
<td>1.3-3.1</td>
</tr>
<tr>
<td>T4 (nmol/L)</td>
<td>&gt; 320</td>
<td>&gt; 320</td>
<td>236.58</td>
<td>—</td>
<td>—</td>
<td>66-181</td>
</tr>
<tr>
<td>TSH (mIU/mL)</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td>&lt; 0.01</td>
<td>0.3-5.0</td>
</tr>
<tr>
<td>TGAb (IU/mL)</td>
<td>583.4</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>&lt; 115</td>
</tr>
<tr>
<td>TPOAb (IU/mL)</td>
<td>30.8</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>&lt; 34</td>
</tr>
<tr>
<td>TRAb (IU/L)</td>
<td>&lt; 0.3</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>—</td>
<td>&lt; 1.75</td>
</tr>
</tbody>
</table>

FT3: Free triiodothyronine; FT4: Free thyroxine; T3: Triiodothyronine; T4: Thyroxine; TSH: Thyroid stimulating hormone; TGAb: Thyroglobulin antibody; TPOAb: Thyroid peroxidase antibody; TRAb: Thyrotropin receptor antibody.

FINAL DIAGNOSIS

Thyrotoxicosis caused by excessive intake of levothyroxine.

TREATMENT

After fluid rehydration, supplemental oxygen, and emergency hemoperfusion, the patient was transferred to our department. Continuous cardiorespiratory monitoring was begun, propylthiouracil (150 mg 3 times per day) was given to reduce the conversion of T4 to T3 and inhibit the synthesis of endogenous thyroxine, propranolol (20 mg every 6 h) to control the heart rate, and intermittent hemoperfusion to increase levothyroxine clearance. Treatment was supplemented with liver protection, adequate energy intake, and other support measures.

On day 3 after admission, the patient lost consciousness without inducement, along with excessive sweating, and without nausea, vomiting, or gatism. Her pupils were sensitive to light, the body temperature was 37.1 °C, the electrocardiogram showed sinus tachycardia, heart rate fluctuations of 120-150 beats/min, blood pressure fluctuations from 90-110/76-94 mmHg, and an oxygen saturation of 94%-96% with a nasal catheter flow of 2 L/min and 40-50 breaths/min. Considering that the patient was in thyroid crisis, intravenous hydrocortisone 100 mg was given and an emergency hemoperfusion was performed. The patient regained consciousness 1 h later.

On day 7 after admission, the patient developed atrial fibrillation, with a heart rate of 100-110 beats/min after emotional agitation; after about 1 h, the patient spontaneously shifted to sinus rhythm. The patient continued to improve and was discharged on day 15.

OUTCOME AND FOLLOW-UP

The patient had no discomfort after discharge, and thyroid function gradually returned to normal.

DISCUSSION

Thyrotoxicosis involves an excess of circulating thyroid hormone that has a number of causes and eventually leads to sympathetic nerve excitation and hypermetabolic syndrome. The symptoms are diverse and include fever, irritability, tachycardia, diarrhea, and seizures. The most common causes of thyrotoxicosis are Graves’ disease, toxic multinodular goiter, and thyroiditis. An excess dose of exogenous thyroid hormones can also lead to thyrotoxicosis, but the published literature on levothyroxine intoxication is limited and most of the described cases are pediatric clinical reports. Cases of adults ingesting overdose levothyroxine are extremely rare, and adults who ingest massive doses of levothyroxine nearly always have mental disorders and other relevant medical histories[2]. Our case occurred in a woman who presented with severe symptoms of thyrotoxicosis after taking a massive levothyroxine dose. As she took the medication after mental stimulation, it may have been related to her history of depression.
Our patient developed clinical symptoms 15 h after an overdose of levothyroxine, improved with treatment, and was discharged 15 d after admission. Golightly et al.[9] studied levothyroxine ingestion in 41 children who accidentally ingested levothyroxine sodium. The patients were managed by a standard protocol based on the reported amount of ingested levothyroxine, which ranged from 0.05-13 mg. The onset of symptoms ranged from 12 h to 11 d, and all symptoms resolved by 14 d after ingestion. Levothyroxine is a synthetic T4 preparation that needs to be converted to T3 in vivo to exert its effects, and has a long half-life of approximately 7 d. Therefore, the symptoms of levothyroxine overdose may be delayed and may last for several days.

Thyroid storm, also known as thyroid crisis, is a serious clinical manifestation of thyrotoxicosis and is characterized by high fever, sweating, tachycardia, arrhythmia, loss of consciousness, and other symptoms that may be life threatening. Prompt diagnosis and active treatment are essential. The Burch and Wartofsky scoring system[10], based on abnormalities of thermoregulation and the central nervous system, gastrointestinal, and cardiovascular systems can be used to help determine whether a patient is experiencing a thyroid storm. This patient had a total score of 55 points, 30 for disturbance of consciousness and 25 for tachycardia, which met the diagnostic criteria for thyroid storm. Thyroid storm can occur a few days after an overdose of levothyroxine. In the cases reported by Wong et al.[11] and Schottstaedt and Smoller[11], the thyroid storm occurred 3 d after ingestion. The delayed occurrence of the thyroid storm can be attributed to the onset of levothyroxine action, which occurs 3–5 d after oral administration.

Alternative treatments of levothyroxine overdose

Conservative monitoring: This is recommended if the patient is asymptomatic or only mildly symptomatic.

Gastrointestinal decontamination: There are no standard criteria for when to perform gastrointestinal decontamination. Ritowitz and White[12] studied 78 children who were all about 12 years of age and had accidentally ingested levothyroxine. They recommended that children with ingestion of ≤ 0.5 mg should not be treated by gastrointestinal purification, those ingesting 0.5-3.0 mg can be treated by ipecac-induced emesis at home, and those ingesting > 3.0 mg should be treated by ipecac-induced emesis followed by activated charcoal. Tunget et al.[13] recommend that children who ingest > 5.0 mg of levothyroxine be given activated charcoal, as it can reduce systemic absorption if given within 1 h of the levothyroxine. Bouchard[14] recommended that adults with a levothyroxine intake of > 5.0 mg be given activated charcoal. There is a limited role for gastric lavage in this setting, except very soon after a massive overdose (e.g., > 10 mg).

Symptomatic treatment: Pay close attention to the patient's vital signs and symptoms, and deal with them promptly. Beta-blockers are recommended for symptomatic treatment of patients with sympathetic overexcitation, such as tachycardia, and propranolol is the first choice. In addition to cardiac benefits, propranolol also reduces the conversion of FT4 to FT3 in peripheral blood. Our patient had palpitations and a heart rate of more than 100 beats/min, so propranolol was given to control the heart rate. Physical cooling and acetaminophen are recommended for patients with fever. Benzodiazepines can be considered if the patient is severely agitated and irritable[14], and antiepileptic drugs, such as phenobarbital, may be considered for patients with seizures[2].

Decrease peripheral conversion of T4 to T3: Propylthiouracil can reduce the peripheral conversion of T4 to T3 and inhibit the synthesis of endogenous thyroxine. Dexamethasone[15], prednisone[16], and hydrocortisone[17] can be useful in severe thyrotoxicosis because they also reduce T4 to T3 conversion. Kirstie et al.[1] recommend the use of corticosteroids in patients with an overdose of levothyroxine (> 10.0 mg), especially when the initial FT4 Level is above the upper limit, or in any patient with associated adrenal insufficiency. In our case, we used propylthiouracil upon admission and we also used hydrocortisone when the patient developed a coma. If necessary, sodium ipodate can also be used because it inhibits type I iodothyronine 5'-monodeiodinase, which catalyzes the T4 to T3 conversion[3].

Increase thyroid hormone clearance: It has been reported that hemoperfusion[17,18] and plasmapheresis[17] remove levothyroxine from serum and can be used to treat acute and severe thyrotoxicosis. Our patient had taken a high dose of thyroxine and thyroid storm was considered, so hemoperfusion was used. Levothyroxine has a high rate of binding to specific transporters of about 99.97%, and plasmapheresis seems to be more effective than hemoperfusion for the clearance of T4. In addition, patients can be given cholestyramine, which reduces thyroid hormone levels by decreasing levothyroxine enterohepatic recycling and enhancing elimination[19].

CONCLUSION

Although most patients with levothyroxine overdose are asymptomatic or have only mild symptoms, severe cases and delayed symptoms have also been reported. Levothyroxine overdose can usually be
diagnosed by the patient’s history and examination results. Treatment of a thyroxine overdose should be based on the levothyroxine dose and the patient’s clinical symptoms and signs.

**ACKNOWLEDGEMENTS**

We are grateful to the patient for allowing publication of this case report.

**FOOTNOTES**

**Author contributions:** Du F managed the patient and drafted the manuscript; Liu SW supervised the manuscript writing; Yang H and Ren WX developed the treatment strategies for the patient; Duan RX was responsible for the care of the patient; All authors read and approved the final manuscript.

**Informed consent statement:** The patient agreed to the related test, and simultaneously signed a written informed consent form for publication of her case details.

**Conflict-of-interest statement:** The authors declare that they have no conflicting interests.

**CARE Checklist (2016) statement:** The authors have read the CARE Checklist (2016), and the manuscript was prepared and revised according to the CARE Checklist (2016).

**Open-Access:** This article is an open-access article that was selected by an in-house editor and fully peer-reviewed by external reviewers. It is distributed in accordance with the Creative Commons Attribution NonCommercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: https://creativecommons.org/Licenses/by-nc/4.0/

**Country/Territory of origin:** China

**ORCID number:** Fang Du 0000-0001-8941-6747; Shi-Wei Liu 0000-0002-7816-3091; Hua Yang 0000-0002-8766-9705; Rui-Xue Duan 0000-0001-6896-2528; Wen-Xia Ren 0000-0003-2866-8865.

**S-Editor:** Gong ZM

**L-Editor:** A

**P-Editor:** Gong ZM

**REFERENCES**


