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## SUPPLEMENTAL APPENDIX

Cohort Profile: A Multi-centre Prospective Validation Cohort of the Chinese Acute-on-Chronic Liver Failure (CATCH-LIFE) Study

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## **SUPPLEMENTARY APPENDIX 1**

### **QUALIFICATIONS FOR THE SELECTION OF CENTRES**

The participating centres met all the following qualifications:

- 1) Hepatology, gastroenterology, or infectious disease departments of tertiary university hospitals;
- 2) The presence of one principal investigator with a research interest in acute-on-chronic liver failure;
- 3) Specific staffs assigned to this study;
- 4) A representative geographic distribution; and
- 5) Monthly admittance and screening numbers if larger than 30 patients.

## SUPPLEMENTARY APPENDIX 2 CASE-REPORT FORMS (CRF)

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## 1 QUESTIONNAIRE FOR THE ELIGIBILITY CRITERIA

### 1 Inclusion Criteria

#### 1.1 Chronic liver disease: (multiple choices permitted)

- Chronic viral hepatitis
- non-alcoholic fatty liver disease (NAFLD) (via B ultrasound report)
- Alcoholic liver disease
- Autoimmune liver disease
- Hereditary liver disease (such as Wilson's disease)
- Compensated cirrhosis
- Decompensated cirrhosis
- Other Chronic liver disease [having abnormal values of serum

alanine aminotransferase (ALT), aspartate transaminase (AST), gamma-glutamyl transferase ( $\gamma$ -GT), alkaline phosphatase (AKP), total bilirubin (TB) or pre-albumin in the past 6 months]

- None

#### 1.2 Acute Deterioration (multiple choices permitted):

- Acute liver injury: ALT or AST > 3 times the upper limit of normal

level in the past week

- Acute liver injury: TB > 2 mg/dL in the past week
- Acute decompensation (AD): gastrointestinal bleeding in the past month
- AD: Hepatic encephalopathy in the past month
- AD: Ascites in the past month

AD: Defined bacterial infection in the past month

None

### 1.3 Inpatients:

patients hospitalized or under emergency observation > 24 hours

Yes

No

### 1.4 Fulfil the criteria 1.1, 1.2, 1.3 above?

Yes (continue)

No (not include)

## 2 Exclusion criteria

<15 years old or >80 years old

Pregnancy

Malignancy of liver or other organs (including leukaemia)

Chronic obstructive pulmonary disease level IV

New York Heart Association (NYHA) Functional Class  $\geq 3$

Myocardial infarction within 3 months before admission

Diabetes with severe complications

Chronic kidney disease with end-stage renal failure

Receiving immunosuppressive agents for non-hepatic diseases

Patients who participated the CATCH-LIFE development cohort study

Fulfilment any of the above criteria?

Yes (exclude)

No (continue)

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## 2 (CRF) DEMOGRAPHIC INFORMATION

- 2.1 Multi-centre enrolment number: --
- 2.2 Hospitalization number: \_\_\_\_\_
- 2.3 Admission date: -- (year-month-date)
- 2.4 Identity card number: \_\_\_\_\_
- 2.5 Name: \_\_\_\_\_
- 2.6 Gender: male female
- 2.7 Date of birth: -- (year-month-date)
- 2.8 Age: \_\_\_\_ (years old)
- 2.9 Mobile number-1(patient): \_\_\_\_\_
- 2.10 Mobile number-2 (family member): \_\_\_\_\_
- 2.11 Fixed-line Telephone number-3 (if available): \_\_\_\_\_
- 2.12 WeChat number (if available): \_\_\_\_\_
- 2.13 Street: \_\_\_\_\_
- 2.14 City: \_\_\_\_\_
- 2.15 Province: \_\_\_\_\_
- 2.16 Postal code: \_\_\_\_\_
- 2.17 Degree of education: doctor master bachelor high school  
primary school illiteracy unknown
- 2.18 Means of payment: self-paying health insurance

### 3 (CRF) HISTORY COLLECTION

#### 3.1 Etiology

##### 3.1.1 Type of chronic liver disease (multiple choices permitted)

- Hepatitis B virus infection (if checked, question 3.5.1 have to be answered)
- Hepatitis C virus infection
- Hepatitis E virus infection (independent or combining with another virus)
- Autoimmune Liver disease
  - PBC
  - AIH
  - PSC
  - unknown
- Alcoholic liver disease (if checked, question 3.5.2 have to be answered)
- Nonalcoholic steatohepatitis
- Schistosomiasis
- hereditary liver disease
- Chronic drug-induced liver disease
- Cryptogenic liver disease

3.1.2 The history of chronic liver disease: \_\_\_\_\_ months/years.

3.1.3 being diagnosed cirrhosis before:  yes  no

#### 3.2 Present acute deterioration

3.2.1 The date of the acute deterioration this time (if more than one ADs in recent one month, then record the date of first one that occurred):

□□□□-□□-□□ (year-month-date)

#### 3.3 Previous decompensation

3.3.1 Whether the patient had previous decompensation

Yes (to question 3.3.2)  No (to block 3.4)

3.3.2 Time of the first decompensation: □□□□-□□ (year-month)

3.3.3 Previous types of decompensation (multiple choices permitted)

gastrointestinal bleeding



- hepatic encephalopathy
- ascites
- pneumonia, SBP or SEPSIS
- jaundice ( TB  $\geq$  5mg/dL)

### 3.4 Predisposition of this time

#### 3.4.1 Predispositions (multiple choices permitted)

- HBV reactivation [in patients with 1) HBV-DNA over 500 copies/ml; 2] received nucleotide analogues (NUCs) therapy in the past 6 months; 3) ALT over 3 times the upper limit of normal level (ULN)] caused by
  - A. NUCs resistance: both HBV-DNA >1000 copies/ml and ALT (over 3 ULN) in the patients under continuous treatment with NUCs over 6 months
  - B. NUCs abandonment: both HBV-DNA >1000copies/ml and ALT (over 3 ULN) in the patients under continuous NUCs treatment but abandoning the antiviral treatment.
  - C. de novo hepatitis: HBV DNA > 10<sup>5</sup> copies/ml, HBsAg reappearance and ALT (over 3 ULN) in a patient previously HBsAg (-) and HBcAb (-)
- Bacterial infection (if checked, question 3.4.2 have to be answered)
  - A. pneumonia
  - B. spontaneous bacteremia or sepsis
  - C. spontaneous bacterial peritonitis (SBP)
  - D. urinary tract infection
  - E. infection of biliary tract
  - F. cellulitis
  - G. other defined infection
- Active alcohol intaking in the past 3 months (over 100ml hard liquor, 400ml wine or 1000ml beer per week in men and over 75% of the above volume in women)
- Hepatitis A,C,E viruses or CMV overlap infection recently
- Gastrointestinal bleeding in the past month before
- Thrombogenesis in the portal vein

- Suspicious hepatotoxic drugs or herbs intake in the past 3 months
- Underwent invasive examination or surgery in the past 3 months
- Defatigation in the past 3 months
- Undefined

#### 3.4.2 Any antibiotics treatment within the past 3 months?

- Yes(to 3.4.3)     No (to block 3.5)

#### 3.4.3 Antimicrobial usage within the past 3 months:

A. Type: \_\_\_\_\_ Date: \_\_\_\_\_ dosage: \_\_\_\_\_ duration: \_\_\_\_\_

### 3.5 Predisposition (detailed)

#### 3.5.1 HBV infection and treatment

Whether the HBV-patient were treated with NUCs before?

- Yes (continue)     No (to question 3.5.2)

A. Antiviral treatment initiation: □□□□-□□ (year-month)

B. Drugs used at treatment initiation: \_\_\_\_\_

C. Whether the antiviral treatment discontinued?

- Yes(to question D)     No (to question 3.5.2)

D. When was the antiviral treatment discontinued? \_\_\_\_\_

E. Why was the antiviral treatment discontinued? \_\_\_\_\_

F. Drugs in use at the time of discontinuation: \_\_\_\_\_

G. Antiviral treatment discontinuation by the patient himself/herself

- Yes     No

H. NUC resistance during the course of treatment

- Yes(to question D)     No (to question 3.5.2)

I. NUC resistance date: □□□□-□□ (year-month)

#### 3.5.2 Alcohol intaking

A. the type and amount of alcohol?

Beer: average amount per day \_\_\_ ml × \_\_\_ years

Wine: average amount per day \_\_\_ ml × \_\_\_ years

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Liquor: average amount per day \_\_\_ ml × \_\_\_ years

### 3.6 History of chronic disease (multiple choices permitted)

- Hypertension
- Diabetes
- Coronary heart disease
- Chronic renal disease
- Rheumatism or connective tissue disease
- Immunodeficiency diseases
- None

## 4 (CRF) DYNAMIC DATA RECORDING DURING HOSPITALIZATION

### 4.1 Basic & Vital Sign

- A. Height \_\_\_\_\_ cm
- B. Weight \_\_\_\_\_ kg
- C. BMI \_\_\_\_\_ {Weight/(Height /100)<sup>2</sup>}
- D. Heart rate \_\_\_\_\_ beats/minute
- E. Temperature \_\_\_\_\_ °C
- F. Blood pressure \_\_\_\_\_/ \_\_\_\_\_ mmHg

### 4.2 Evaluation of circulatory, respiratory, central nervous systems and renal

#### 4.2.1 Circulatory system:

- A. Whether vasopressors (exclude telipressin) had been used to maintain the basic blood pressure?  Yes  No

#### 4.2.2 Respiratory system:

- A. SpO<sub>2</sub>= \_\_\_\_\_ %
- B. SPO<sub>2</sub>/FiO<sub>2</sub>= \_\_\_\_\_ {SPO<sub>2</sub>/0.21}
- C. Supplemental oxygen?  
 Yes (continue)  No (to question 4.2.3)
- D. Oxygen flow rate \_\_\_\_\_ L/min
- E. FiO<sub>2</sub>(with O<sub>2</sub>) = {(21+oxygen flow rate\*4) /100}
- F. SPO<sub>2</sub>/FIO<sub>2</sub>(with O<sub>2</sub>) = \_\_\_\_\_ {SPO<sub>2</sub>/FIO<sub>2</sub>(with O<sub>2</sub>)}
- G. Whether the traumatic mechanical ventilation had been used?

#### 4.2.3 Renal

- A. Whether the renal replacement therapy (hemodialysis) had been used?  
 Yes  No

#### 4.2.4 Central nervous system

- A. Location identification (ask the patient: Do you know where you are?)  
 Good  Poor
- B. Identification capacity [ask the patient: Do you know who he/she(a relative or

the doctor) is ?]

Good

Poor

C. Calculation capacity: Ask the patient: What is 100 minus 7?

Right answer (to question D)  Wrong answer (to question E)

D. Time required for the right answer: \_\_\_\_\_ seconds

E. Grades of hepatic encephalopathy (HE)

grade 0: Normal

grade 1: Minor lack of awareness, shortened attention span, sleep disturbance and altered mood. Asterixis may be present. (the patient can successfully answer the question A, B and C, but the time required for question C is long/the patient can successfully answer the question A and B but not the question C).

grade 2: Lethargy, disorientation to time, amnesia of recent events, impaired ability for simple computations, inappropriate behavior and slurred speech. Asterixis is present (the patient cannot successfully answer neither of the question A nor B)

grade 3: Somnolence, confusion, disorientation to location, bizarre behavior, clonus, nystagmus and positive Babinski sign. Asterixis is usually absent.

grade 4: Coma. Lack of verbal, eye, and oral response.

### 4.3 Evaluation of Bacterial infection, SIRS and Sepsis

#### 4.3.1 Bacterial infection

A. Had the patient got defined infection?

Yes (to question B)

Suspected (to question E)

no (to the question 4.3.2)

B. What's the location of the infection? (multiple choices permitted)

Pneumonia ( via image of focus of infection on X ray or CT)

Spontaneous bacterial peritonitis (SBP) (positive ascites culture or absolute counting of neutrophil in ascite  $\geq 250 \times 10^6/L$ )

- Spontaneous bacteremia (positive blood culture) or sepsis
- Urinary tract infection (positive middle urine culture)
- Cellulitis
- Infection of biliary tract
- Others, culture result and location: \_\_\_\_\_

C. Type and name of pathogenic microorganism: \_\_\_\_\_

D. Drug susceptibility testing (you can upload the photos)

E. Had blood culture been taken?

- Yes  No

#### 4.3.2 SIRS

A. criteria (multiple choices permitted)

- temperature  $> 38^{\circ}\text{C}$  or temperature  $< 36^{\circ}\text{C}$
- heart rate  $> 90$  beats per minute
- respiratory  $> 20$  times per minute or hyperventilation ( $\text{PaCO}_2 < 32\text{mmHg}$ )
- WBC  $> 12 \times 10^9/\text{L}$  or  $< 4 \times 10^9/\text{L}$

B. Were at least two of the above four criteria met?

- Yes  No

#### 4.3.3 Sepsis

A. Both bacterial infection and SIRS above are met?

- Yes  No

### 4.4 Acute Decompensation (AD), Organ Failure (OF) & ACLF Evaluation

4.4.1. The number of AD (multiple choices permitted)

- A. TB  $> 5\text{mg/dl}$   yes  no
- B. gastrointestinal bleeding within recent 1 month  yes  no
- C. Hepatic encephalopathy within recent 1 month  yes  no
- D. Ascites within recent 1 month  yes  no
- E. defined bacterial infection  yes  no

count the number of AD: \_\_\_\_\_ {number of YES in question 4.4.1}

## 4.4.2 The number of OF (multiple choices permitted)

- A. Liver failure (TB>22mg/dl) yes no
- B. Coagulation failure (INR>2.0) yes no
- C. Renal failure (Cr>2mg/dl or hemodialysis) yes no
- D. Respiratory failure (Artificial respiratory support) yes no
- E. Circulatory failure (Vasopressor using) yes no
- F. CNS failure (HE Grade $\geq$ 2) yes no

count the number of OF: \_\_\_\_\_ {number of YES in question 4.4.2}

## 4.4.3 ACLF Grade= \_\_\_\_\_

{If the number of OF = 1, the ACLF Grade = 1;

if the number of OF = 2, the ACLF Grade = 2;

if the number of OF  $\geq$  3, the ACLF Grade = 3 }

## 4.5 Medication During Hospitalization

## 4.5.1 Whether thymosin has been used?

- Yes (continue) No (to question 4.5.2)

A. Type: \_\_\_\_\_ Date: \_\_\_\_\_ dosage: \_\_\_\_\_ duration: \_\_\_\_\_

## 4.5.2 Whether Proton-pump inhibitors (PPI) has been used?

- Yes (continue) No (to question 4.5.3)

A. Type: \_\_\_\_\_ Date: \_\_\_\_\_ dosage: \_\_\_\_\_ duration: \_\_\_\_\_

## 4.5.3 Whether glucocorticoids have been used?

- Yes (continue) No (to question 4.5.4)

A. Type: \_\_\_\_\_ Date: \_\_\_\_\_ dosage: \_\_\_\_\_ duration: \_\_\_\_\_

## 4.5.4 Whether antibiotics have been used?

- Yes (continue) No (to question 4.5.4)

A. Type: \_\_\_\_\_ Date: \_\_\_\_\_ dosage: \_\_\_\_\_ duration: \_\_\_\_\_

## 5: LABORATORY TESTS DURING HOSPITALIZATION

5.1 Peripheral blood cells count		Sampling Schedule
5.1.1	Haemoglobin (HGB), g/L	Required at Day 1 / 4 / 7 / 14 / 21 / 28
5.1.2	White blood cell count (WBC), $\times 10^9/L$	
5.1.3	Proportion of neutrophils (N%)	
5.1.4	Proportion of lymphocytes (L%)	
5.1.5	Proportion of monocytes (M%)	
5.1.6	Neutrophil lymphocyte ratio (NLR)	
5.1.7	Platelet count (PLT) , $\times 10^9/L$	
5.2 Liver function test		Required at Day 1 / 4 / 7 / 14 / 21 / 28
5.2.1	Alanine aminotransferase (ALT), U/L	
5.2.2	Aspartate aminotransferase (AST), U/L	
5.2.3	Albumin (ALB), g/L	
5.2.4	Pre-ALB, mg/L	
5.2.5	Total bilirubin (TB), mg/dL	
5.2.6	Alkaline phosphatase (AKP), U/L	
5.2.7	Glutamyl transpeptidase ( $\gamma$ -GT), U/L	
5.3 Renal function test		Required at Day 1 / 4 / 7 / 14 / 21 / 28
5.3.1	Creatinine (Cr), mg/dL	
5.3.2	Blood urea nitrogen (BUN), mmol/L	
5.4 Electrolytes		Required at Day 1 / 4 / 7 / 14 / 21 / 28
5.4.1	Sodium (Na <sup>+</sup> ), mmol/L	
5.4.2	Potassium (K <sup>+</sup> ), mmol/L	
5.4.3	PH	
5.5 Coagulation test		Required at Day 1 / 4 / 7 / 14 / 21 / 28
5.5.1	Prothrombin time (PT), seconds	
5.5.2	International normalized ratio (INR)	
5.5.3	D-dimer, $\mu g/L$	
5.6 HBV-DNA, antigens and antibodies test		Required at Day 1 only
5.6.1	HBV-DNA load, copies/ml	
5.6.2	HBsAg, IU/ml	
5.6.3	HBsAb, mIU/ml	
5.6.4	HBcAb, S/CO	
5.6.5	HBeAg, S/CO	
5.6.6	HBeAb, S/CO	
5.7 Other hepatitis virus antibodies test		Required at Day 1 only



5.7.1	anti-HAV(IgM)	
5.7.2	anti-HEV(IgM)	
5.7.3	anti-HCV	
5.8 Immunoglobulin test		Optional
5.8.1	Immunoglobulin A (IgA), g/L	
5.8.2	Immunoglobulin M (IgM), g/L	
5.8.3	Immunoglobulin G (IgG), g/L	
5.8.4	Immunoglobulin G-4 (IgG-4), g/L	
5.9 Autoantibody for autoimmune liver disease		Optional
5.9.1	Antinuclear antibody (ANA), titer	
5.9.2	Anti-smooth muscle antibody (SMA), titer	
5.9.3	Anti-mitochondria antibody (AMA), titer	
5.9.4	AMA-M2, titer	
5.10 Others test (1)		Required at Day 1 only
5.10.1	C-reactive protein (CRP), mg/L	
5.10.2	Procalcitonin (PCT), ng/ml	
5.10.3	AFP, ng/ml	
5.10.4	CA199, U/ml	
5.10.5	Blood ammonia, umol/L	
5.10.6	Fasting blood glucose (GLU), mmol/L	
5.11 Others test (2)		Optional
5.11.1	lactic acid, mmol/L	
5.11.2	Serum ferritin, $\mu$ mol/L	
5.11.3	Serum amyloid A, mg/L	
5.12 Cytokine		Optional
5.12.1	Interleukin IL-6, ng/ml	
5.12.2	Interleukin IL-8, ng/ml	
5.12.3	Interleukin IL-10, ng/ml	
5.13 Bacterial culture test		If infection is suspected
5.13.1	Blood culture	
5.13.2	Blood culture bacterial types	
5.13.3	Sputum culture	
5.13.4	Sputum culture bacterial types	
5.13.5	Middle urine culture	
5.13.6	Middle urine culture bacterial types	
5.14 Ascites test		If abdominocentesis

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5.14.1	WBC count in ascites,	is taken
5.14.2	Proportion of polynuclear cells	
5.14.3	Absolute polynuclear cell count,	
5.14.4	RBC count in ascites fluid,	
5.14.5	Lactic dehydrogenase (LDH),	
5.14.6	Adenosine deaminase (ADA),	
5.14.7	Ascites culture	
5.14.8	Ascites culture bacterial types	

## 6: IMAGING TEST RESULTS

6.1 Abdominal ultrasound	
6.1.1	Date of test: □□□□-□□-□□ (year-month-date)
6.1.2	Ascites: <input type="checkbox"/> Positive <input type="checkbox"/> Negative
6.1.3	If ascites positive, the depth _____ mm
6.2 CT/MRI scan -- cirrhosis (Preferred enhanced CT results)	
6.2.1	Test used: <input type="checkbox"/> CT <input type="checkbox"/> MRI
6.2.2	Date of test: □□□□-□□-□□ (year-month-date)
6.2.3	Result: <input type="checkbox"/> Cirrhosis <input type="checkbox"/> Non-cirrhosis <input type="checkbox"/> Undefined
6.3. CT/MRI scan -- portal thrombosis /varices/ pulmonary infection	
6.3.1	Test used: <input type="checkbox"/> CT <input type="checkbox"/> MRI
6.3.2	Date of test: □□□□-□□-□□ (year-month-date)
6.3.3	Whether portal thrombosis has been found? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undefined
6.3.4	Whether esophageal and gastric varices have been found? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undefined
6.3.5	Whether pulmonary infection has been found by CT scan? <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Undefined
6.4. Fibro-scan	
6.4.1	Test date: □□□□-□□-□□ (year-month-date)
6.4.2	Result: _____

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## **7: (CRF) CHECK LIST FOR DATA COLLECTION COMPLETENESS DURING HOSPITALIZATION**

- Eligibility Criteria
- Demographic Information
- History Collection
- Dynamic Data Recording
  - Basic & Vital Sign
  - Evaluation of circulatory, respiratory, central nervous systems and renal
  - Evaluation of bacterial infection/sirs/sepsis
  - AD, OF & ACLF evaluation
  - Medication during hospitalization
- Laboratory Tests (required)
  - Peripheral blood cells count
  - Liver function test
  - River function test
  - Electrolytes
  - Coagulation test
  - Others test (1)
- Laboratory Tests (optional)
  - Immunoglobulin test
  - Others test (2)
  - Cytokine
  - Bacterial culture test
  - Ascites test
- Imaging tests
  - B ultrasound
  - CT/MRI scan -- cirrhosis
  - CT/MRI scan -- portal thrombosis /varices / pulmonary
  - Fibro-scan
- Biospecimen collection
  - Whole Blood
  - Serum
  - Urine

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## 8: (CRF) SUMMARY FOR THE HOSPITALIZATION

8.1 Hospitalization ending date: □□□□-□□-□□ (year-month-date)

8.2 Period of hospitalization: \_\_\_\_days

8.3 Hospitalization Expenses: \_\_\_\_yuan

8.4 Outcome of hospitalization

Discharged (continue)

Died (to question 8.6)

Liver transplanted (to question 8.7)

8.5 Discharge status

Improved (regular outpatient and Tel. Follow-up)

Stable (regular outpatient and Tel. Follow-up)

Deteriorated (Tel. follow-up within 3 days after discharge)

8.6 If the patient dies, main cause of death (multiple choices permitted)

Multiple organ failure (MOF)

Septic shock

Hypovolemic shock

Other cause: \_\_\_\_\_

8.7 If the patient has LT, whether the patient is in the list of LT?

Yes

No

A. What was the pathological result of the patient's liver? \_\_\_\_\_

B. Whether the pathological result of the patient's liver is cirrhosis?

Yes

No

C. Whether the pathological result include "sub-massive necrosis" or "necrosis"?

Yes

No

D. Liver transplant surgery related Expenses: \_\_\_\_yuan

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## 9: (CRF) TELEPHONE FOLLOW-UP

9.1 Date: □□□□-□□-□□ (year-month-date)

9.2 The patient's status

- Alive (to question 9.3)
- Died (to question 9.4)
- Liver transplanted (to question 9.5)
- Loss to follow-up

9.3 Whether there are new onset complications?

- Yes
- No

if yes, please choose

- Gastrointestinal bleeding,
- Hepatic encephalopathy,
- Ascites,
- Bacterial infection
- Jaundice

9.4 Date of death: □□□□-□□-□□ (year-month-date)

9.5 Date of liver transplantation: □□□□-□□-□□ (year-month-date)

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## 10: (CRF) FINAL REPORT FOR THE FOLLOW-UP

### 10.1 The patient's outcome

- Death
- LT
- malignancy
- Lost follow-up
- Alive

10.2 Date of the patient's outcome: □□□□-□□-□□ (year-month-date)

10.3 If the patient dies, main cause of death: \_\_\_\_\_

10.4 If the patient had LT, name of LT hospital: \_\_\_\_\_

10.5 If the patient lost follow-up, reasons: \_\_\_\_\_

**SUPPLEMENTARY APPENDIX 3****Table The monthly enrolment number in each centre**

Centre	Month of enrolment					
	SUM	SEP	OCT	NOV	DEC	JAN
All centres	1370	127	250	316	375	302
Ditan Hospital (Beijing)	199	18	36	28	53	64
Southwest Hospital (Chongqing)	178	15	25	47	49	42
Xiangya Hospital (Hunan)	167	54	27	32	31	23
Renji Hospital (Shanghai)	162	15	49	42	41	15
Guangzhou Nanfang Hospital (Guangdong)	125	19	34	29	22	21
Taihe Hospital (Hubei, Shiyuan)	121	0	3	36	37	45
Wuhan Union Hospital (Hubei, Wuhan)	115	1	12	20	38	44
First hospital of ZU (Zhejiang)	79	4	11	17	37	10
SPHCC (Shanghai)	67	0	19	14	23	11
Second Hospital of SDU (Shandong)	46	1	11	15	15	4
First Hospital of JU (Jilin)	42	0	5	16	13	8
Henan Provincial People's Hospital (Henan)	35	0	0	4	16	15
First hospital of XMU (Xinjiang)	34	0	18	16	0	0