

## SUPPLEMENTARY MATERIALS

1. Please write the name of the country and city in which your hospital is located (Country: \_\_\_\_\_, City: \_\_\_\_\_).
2. What is the full name of your hospital? ( \_\_\_\_\_ )
3. How many CT machines does your hospital possess? ( \_\_\_\_\_ )
4. The questions below are about the use of contrast agents in CT scans at your hospital.
  - A. About how many contrast-enhanced CT scans are taken in a day at your hospital?
    - 1) Less than 30 scans
    - 2) Between 30 and 50 scans
    - 3) Between 50 and 100 scans
    - 4) Between 100 and 200 scans
    - 5) More than 200 scans
  - B. How many types of contrast agents are available in your hospital, according to components, not brand?
    - 1) 1
    - 2) 2
    - 3) 3
    - 4) 4
    - 5) More than 5
5. The questions below are about informed consent and surveying risk factors in patients who are undergoing CT scans.
  - A. Is there a standard consent form for the use of CT contrast agents in your hospital? (Yes / No)
  - B. Are patients in your hospital provided written consent before undergoing contrast-enhanced CT scans? (Yes / No)
  - C. Do you identify the patient's individual risk factors before performing a contrast-enhanced CT scan? (Yes / No)
  - D. Which risk factors do you identify before performing contrast-enhanced CT scans? (choose all applicable risk factors)
    - 1) None
    - 2) History of contrast-enhanced CT scan
    - 3) History of a hypersensitivity reaction after contrast-enhanced CT scans
    - 4) Drug allergy
    - 5) Asthma
    - 6) Diabetes
    - 7) Hypertension
    - 8) Renal diseases
    - 9) Cardiac diseases
    - 10) Hyperthyroidism
    - 11) Others ( \_\_\_\_\_ )
  - E. Do you check the patient's renal function before performing a contrast-enhanced CT scan? (Yes / No)
  - F. Which laboratory tests do you use to evaluate renal function, and what are the standard cut-off points for performing contrast-enhanced CT scans? (choose all applicable answers)
    - 1) None
    - 2) Serum creatinine level: \_\_\_\_\_ (mg/dL)

3) Glomerular filtration rate (GFR): \_\_\_\_\_ (mL/min/1.73 m<sup>2</sup>)

4) Others ( ): \_\_\_\_\_

G. Do you check whether the patient is taking metformin before performing a contrast-enhanced CT scan? (Yes / No)

H. What are the standard cut-off points for stopping metformin before performing contrast-enhanced CT scans?

(choose all)

1) Don't stop

2) Always stop

3) Serum creatinine level: \_\_\_\_\_ (mg/dL)

4) GFR: \_\_\_\_\_ (mL/min/1.73 m<sup>2</sup>)

5) Others ( ): \_\_\_\_\_

I. What is the policy for maintaining the discontinuation of metformin before and after performing contrast-enhanced CT scans?

1) Don't stop

2) Stop for 1 day after CT scan

3) Stop for 1 day before and 1 day after CT scan

4) Stop for 2 days after CT scan

5) Stop for 2 days before and 2 days after CT scan

6) Stop for 2 days after CT scan, decide when to restart depending on lab tests

7) Others ( )

6. The questions below are about fasting before performing contrast-enhanced CT scans.

A. Do you require your patients to fast before performing contrast-enhanced CT scans? (Yes / No)

B. What foods do patients abstain from and how long is the fasting period before performing contrast-enhanced CT scans?

1) None

2) Only solid food

- Fasting period: solid \_\_\_\_\_ hours before scan

3) Both solid food and water

- Fasting period: solid \_\_\_\_\_, water \_\_\_\_\_ hours before scan

7. The questions below are about the post-scan management of contrast-enhanced CT scans.

A. Is there a set of emergency drugs and equipment in the CT room? (Yes / No)

- If so, what medicines and equipment are available? (choose all)

1) Epinephrine

2) Ventolin

3) Chlorpheniramine

4) Steroids

5) Oxygen mask

6) Intubation kit

7) Defibrillator

8) Others ( )

B. Do you have any medical staff accompanying the use of a CT contrast agent during watch hours?

1) None

2) Radiologist

3) Clinician (intern, resident, medical specialist)

- 4) Nurse
- 5) Others ( )

8. The questions below are about the In-hospital system for managing contrast agents.

A. Which department is primarily responsible for the side effects of contrast agents? (choose all)

- 1) None
- 2) Radiology department
- 3) Allergy (internal medicine)
- 4) Nephrology (internal medicine)
- 5) Others ( )

B. Is there an In-hospital system that is used to record and check the patient's side effects from the contrast agent?

(Yes / No)

- If so → i            If not → ii

i. If so, what type of system do you use? (choose all)

- 1) Inpatient and outpatient records in the electronic medical record (EMR)
- 2) Other tabs in the EMR such as an alert tab
- 3) Paper medical records
- 4) A separate In-hospital system other than the EMR
- 5) Others ( )

ii. If not, how do you check for patient's previous events?

- 1) Patient's acknowledgment at time of written consent
- 2) Do not check
- 3) Others ( )

9. The questions below are about protocols for managing contrast agent side effects.

A. Is there any emergency protocol for responding to side effects related to contrast agents? (Yes / No)

i. If so, which of the below are included in the protocol? (choose all)

- 1) None
- 2) Categorization of side effect severity
- 3) Drug administration (antihistamine, steroid, epinephrine, etc.)
- 4) Contacting resuscitation team
- 5) Protocols for delayed hypersensitivity reactions
- 6) Protocols for further use of contrast agents in future tests
- 7) Others ( )

B. Are any pre-scan protocols available for patients with a history of contrast agent side effects? (Yes / No)

- If so → i, ii            if not → iii

i. If so, which of the below are included in the protocol? (choose all)

- 1) None
- 2) Skin test
- 3) Pre-scan drug administration (antihistamine, steroid, etc.)
- 4) Accompanying medical staff
- 5) Post scan monitoring
- 6) Others ( )

ii. If so, what is the formal process for using contrast agents for patients with previous adverse effects? (choose all)

- 1) After skin test, replace with negative contrast agent
- 2) Replace contrast agent without a skin test

- 3) Pre-scan antihistamine prescription regardless of severity
- 4) Pre-scan antihistamine and steroid prescription regardless of severity
- 5) Pre-scan antihistamine only prescribed according to severity
- 6) Pre-scan antihistamine and steroid prescription according to severity
- 7) Others ( )

iii. If not, how do you perform contrast-enhanced CT scans in patients with previous side effects?

- 1) Cancel examination regardless of the severity of past side effects
- 2) Proceed according to severity and cancel examination if severe
- 3) Proceed according to severity and prescribe pre-scan medication if severe
- 4) Proceed with examination after pre-scan medication regardless of severity
- 5) Others ( )