

USING THE AUDIENCE RESPONSE SYSTEM (ARS)

Question –

As a speaker, I have used an
ARS.....

- 1) Never
- 2) 1-3 times
- 3) 4-10 times
- 4) >10 times

Audience Response System

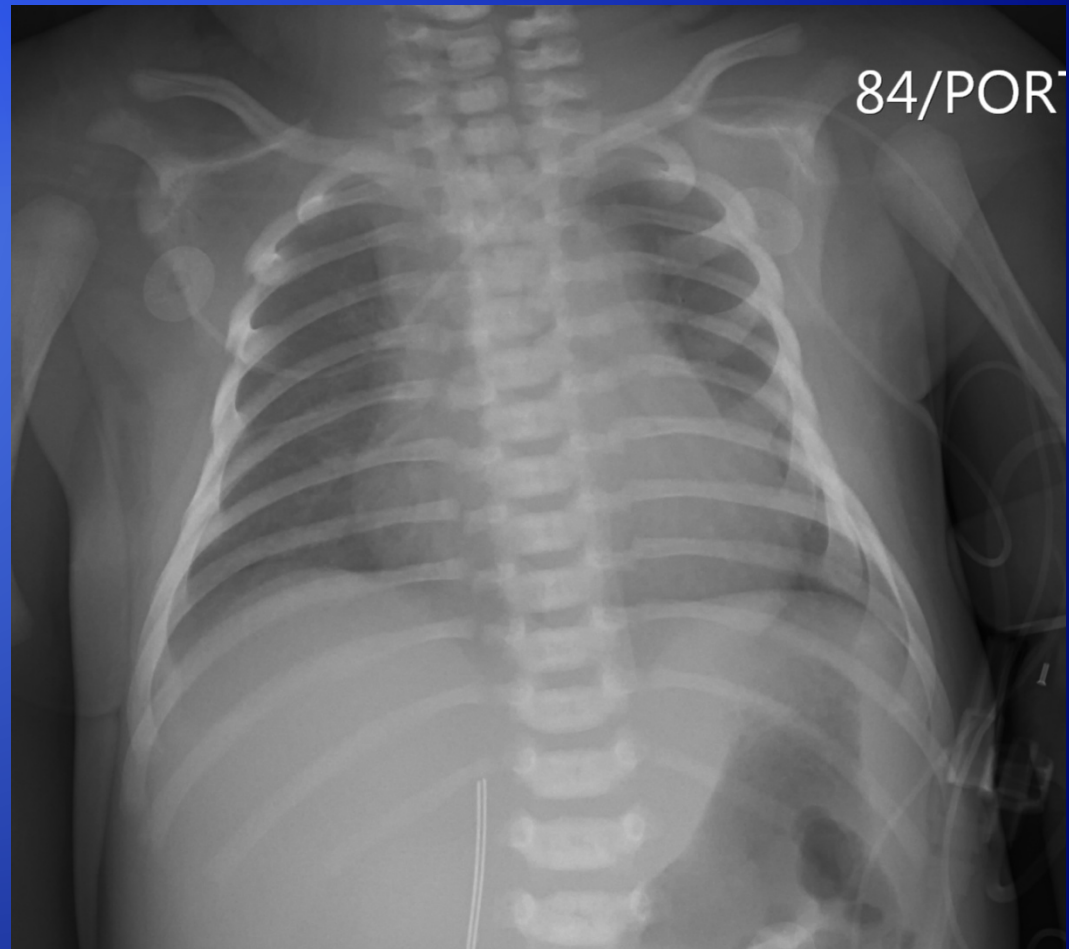
- ◆ 3 key elements
 - ◆ Anonymity
 - ◆ Interactivity
 - ◆ Enjoyment

ARS – Tool or Fool?

- ◆ Effective educational tool
 - ◆ Stimulating, interactive format
- ◆ Distracting foolish annoyance
 - ◆ Disrupts pace of learning

What do you think of the left upper extremity PICC?

1. OK
2. Not OK
3. What left upper extremity PICC?
4. The heart is enlarged



Where do you find the rules?

RSNA CME

Brief Guide to Writing Good Multiple Choice Questions

BEFORE YOU START: Aim to test key concepts and vital information from the online course. All questions must include remediation.

Definitions:

Stem: the “question” part of the item

Distractors: the incorrect choices

Key: the correct answer

The Stem:

Should be “focused”: that is, contain the *main idea* of the question. (Use the “cover test”: can you cover the options and still answer the question?)

Do not use negative constructions:

- A. “What finding is **NOT** associated with...”
- B. “...all of the following **EXCEPT**...”
- C. “Which of the following is **LEAST** likely...”

Sample Question:

Where do gastrointestinal stromal tumors most commonly occur? **[STEM]**

- A. Esophagus **[DISTRACTOR]**
- B. Stomach **[KEY]**
- C. Small bowel **[DISTRACTOR]**
- D. Colon **[DISTRACTOR]**

Do use simple wording and sentence structure. No jargon or unusual abbreviations. Include no unnecessary information, and no “red herrings” that might be misleading.

The Key (correct answer):

- **MUST** be 100%, no doubt, accepted as correct

ARS Benefits

- ◆ Anonymous polling
- ◆ Immediate feedback
- ◆ Interactive learning
- ◆ Insure understanding
- ◆ Improve attentiveness

ARS Benefits

- ◆ Increase engagement
- ◆ Enhance retention
- ◆ Data collection

Possible uses

- ◆ Audience demographics
- ◆ Diagnostic considerations
- ◆ Further imaging choices
- ◆ Course evaluation
- ◆ Assess learning - pre- and/or post-lecture test

Optimizing ARS utilization

- ◆ Advance planning - how and when
- ◆ Assure anonymity
- ◆ Use warm up question
- ◆ Keep responses at 5 or fewer
- ◆ Read Q & A before starting timer

Optimizing ARS utilization

- ◆ Explain how timer works
- ◆ Comment on responses
- ◆ Don't overuse (irregular intervals)

Questions should be.....

- ◆ Short
- ◆ Unambiguous
- ◆ Interesting
- ◆ Discussion-provoking

Common Mistakes

- ◆ No explanation of how to use system
- ◆ Questions too complicated
- ◆ Questions insulting to audience intellect
- ◆ Questions don't relate well to content
- ◆ No discussion of answer
- ◆ No deviation in approach based on answers

What type of practice are you in?

1. Academic
2. Large multispecialty clinic
3. Private practice radiology group
4. Solo practice

OK

Which of the following is associated with cystic fibrosis?

1. Meconium plug
2. Meconium ileus ***
3. Meconium aspiration

OK

Which of the following is associated with cystic fibrosis?

1. Crohn's disease
2. Meconium ileus
3. Bronchiectasis
4. All of the above

Not OK

Should hormonal signs or symptoms be expected during or following hepatic embolization in patients with metastatic non-functional neuroendocrine tumor to the liver?

1. Yes
2. No

Not OK

A patient with Stage IIIB non-small cell lung cancer undergoes concurrent chemotherapy and external beam radiotherapy to the primary tumor and involved mediastinal nodes to a dose of 66 Gy. A follow up FDG-PET/CT scan performed 3 months after completion of treatment reveals new, diffuse FDG uptake in the lung extending ~2 cm around the prior PET positive masses. The patient is asymptomatic. What is the most likely explanation for the new areas of FDG uptake?

1. Tumor progression
2. Post-radiation inflammation ***
3. Pneumonia
4. Atelectasis

Not OK

Should **all** patients with metastatic neuroendocrine tumor to the liver be started on octreotide?

1. Yes
2. No
3. Uncertain

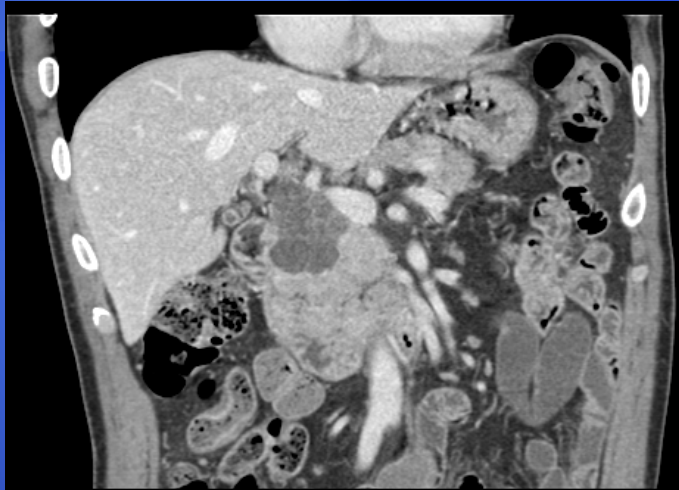
Not OK

SAMS

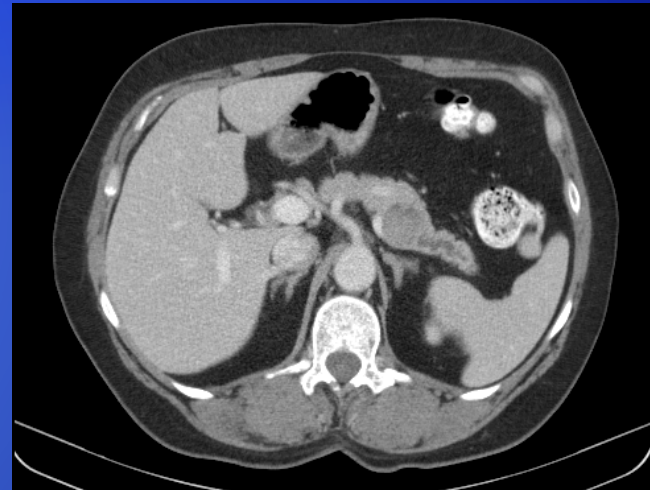
- ◆ Given as live presentations
- ◆ Single correct answer
- ◆ Be as brief and clear as possible
- ◆ Read rules and follow them!

Which of the following pancreatic lesions is most likely benign?

A



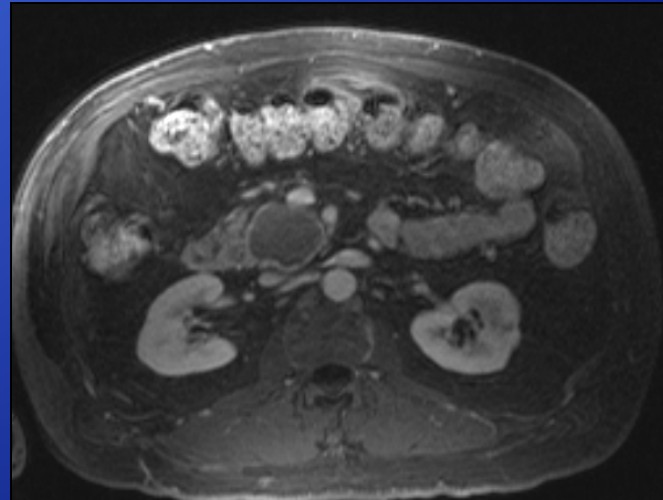
B



C

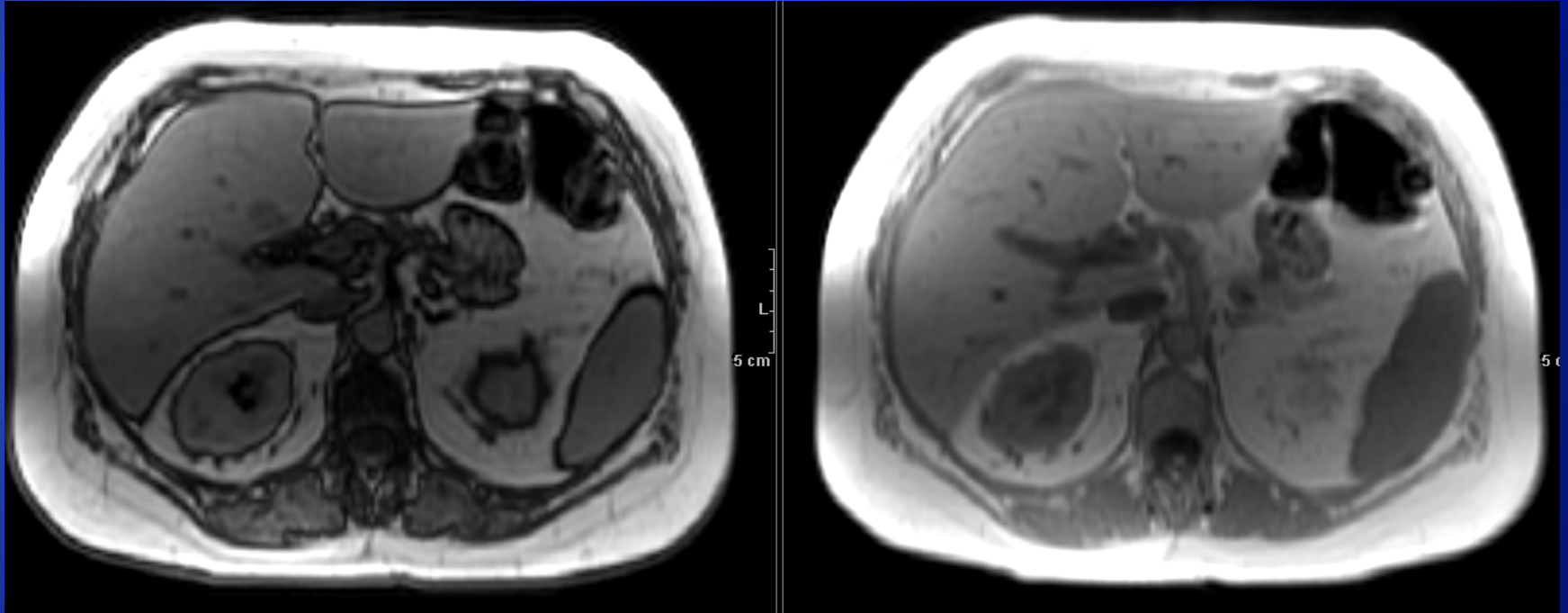


D



OK

Differential Diagnosis includes:



A: Focal fat

B: Hepatic adenoma

C: Hepatocellular carcinoma

D: A or B

E: A, B, or C

Not OK

Don't waste time!

- ◆ 100 people for 30 minutes = 3000 minutes = 50 hours = 6 work days

Conclusions

- ◆ Design effective questions
 - ◆ Short & unambiguous
- ◆ Be prepared to deviate
- ◆ ARS – Valuable adjunct to education

