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NCCN Guidelines Panel: Neuroendocrine and Adrenal Tumors

On behalf of the Society of Interventional Oncology, we respectfully request the NCCN Neuroendocrine and Adrenal Tumors guideline panel review the enclosed recommendations:

Specific change 1: NET-7: Please change SBRT (if surgery contraindicated) or Thermal ablation (if surgery and RT contraindicated) to: **Thermal ablation or SBRT (if surgery is contraindicated).**

Rationale: There are no comparative studies between thermal ablation and SBRT. Both therapies provide effective local tumor control.

Specific change 2: Please change footnote ff as follows. [ff]After any prior biliary instrumentation, there are increased risks **of infectious complications** associated with liver-directed therapies.

Specific change 3: AGT-5: Third bullet point: Consider local therapy (ie ~~SBRT, thermal ablative therapies~~ liver-directed therapy, SBRT)

Specific change 4: NE-G: Indications for Hepatic Arterial Embolization (third bullet point): Prior Whipple surgery or biliary instrumentation (sphincterotomy, stent) increases the risk of liver abscess due to biliary bacterial colonization; infectious complications occur in about 20% of cases following TAE/TACE and ~~10%~~ 8% after TARE, even with broad-spectrum antibiotic coverage.

Specific change 5 NE-G: Embolization Modalities
TAE and TACE (third bullet sub-point)
In patients with bilobar disease, TAE/TACE is generally performed over at least two procedures, approximately one month apart. ~~Patients with very high liver tumor burden may require three or four embolizations to safely treat the entire liver.~~ Short-acting octreotide should be administered ~~pre-embolization~~ ***peri-procedurally*** for patients with hormonal syndromes. Overnight observation is typically appropriate to monitor and treat symptoms of post-embolization syndrome ~~such as pain and nausea~~ ***and exacerbation of hormone-related symptoms.***

Specific change 6 NE-G*: TARE* *– please edit subsection as follows:*
~~Routine use of radioembolization (TARE) using yttrium-90 microsphere is controversial .~~*Add the following bullet point: TARE may be used for*

- *Lobar or segmental (less than lobar) disease distribution*
- *Tumors without somatostatin receptor expression*
- *Patients with prior biliary tract instrumentation (lower risk of hepatobiliary infection than thermal ablation, TAE, and TACE)*
- *Rapid liver disease progression (lobar treatment better tolerated than TAE/TACE)*

* ~~Short-term side effects are milder than observed with TAE or TACE~~***TARE is better tolerated than TAE/TACE***, but late radioembolization-induced chronic hepatotoxicity (RECHT) may occur in ~~10%-20% of~~ long-term survivors ~~in retrospective series~~, and is particularly a concern among patients with bilobar disease.

Specific change 7: Ablative Therapy: **-** ~~Includes ablative techniques such as radiofrequency, microwave, and cryotherapy. There are no randomized clinical trials and prospective data for these interventions are limited. However, data on the use of these interventions are emerging.~~ Percutaneous thermal ablation, often using microwave energy ***(radiofrequency and cryoablation are also acceptable)***, can be considered for oligometastatic liver disease, generally up to four lesions each smaller than 3 cm. Feasibility considerations include ~~conspicuity on CT or ultrasound~~ ***safe percutaneous imaging-guided approach*** to the target lesions, and proximity to vessels, bile ducts, or adjacent non-target structures that may require hydro- or aero-dissection for displacement.

References:

1. Devulapalli K, et al. Radiology 2018; 288(3):774-781
2. Patel S, et al., J Vasc Interv Radiol 2006, 17:1931–1934
3. Kim W, et al. J Vasc Interv Radiol 2001; 12(8):965-968
4. Cholapranee A, et al. Cardiovasc Intervent Radiol 2015; 38(2):397-400

Thank you for your consideration,

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