O3_A2_A_Scientific Evidence

PERFORMIMG PARACENTESIS

Q1	**Can paracentesis be safely performed in patients with a risk of bleeding? (Thrombocytopenia, elevated INR, anticoagulation treatment etc.)**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults Children in a palliative facility
Intervention	**Paracentesis**
Comparator	Avoid paracentesis
Outcome	Core outcome measures: Bleeding; Mortality (any cause); Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	None.

Studies:
No randomized controlled trials have been performed regarding this issue, mainly retrospective studies. One systematic review regarding haemorrhagic complications was found [1]. No study evaluated the bleeding risk of cancer patients without liver cirrhosis.

Indications:
Although biochemical values have not been evaluated in RCTs, studies generally suggest that patients undergoing paracentesis should have a platelets value > 50 $x10^9$ /L, Child Pugh class A or B (in patients with associated liver cirrhosis) and an INR <1.5.

Conclusions:
Paracentesis is generally indicated in patients requiring rapid relief of symptoms and can be associated with several risks, such as visceral injury, bleeding, fluid leak, sepsis, hypotension and renal damage. The associated risks have a low incidence, and can be divided into minor and major events.

Bleeding complications occurred in "sicker" patient population (more advanced liver disease, renal dysfunction) and could be related to the puncture site. The general incidence varies between 0.99%-3.3% [1,3,5]. One study did not find a relation between platelet count and bleeding complications, but the relative risk of bleeding in patients with an INR> 1.5 was 1.45 [2].

Platelet transfusion before paracentesis in patients with platelet count < 50 x 10^9 /L is not recommended.

References:

1. Sharzehi K, Jain V, Naveed A, et al. Hemorrhagic complications of paracentesis: a systematic review of the literature. *Gastroenterol Res Pract* 2014; 2014:985141.
2. Kurup AN, Lekah A, Reardon ST, et al. (2015) Bleeding rate for ultrasound-guided paracentesis in thrombocytopenic patients. *J Ultrasound Med* 34:1833–1838

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3. Lin, Su et al. "Hemorrhagic Complications Following Abdominal Paracentesis in Acute on Chronic Liver Failure: A Propensity Score Analysis." Ed. Giovanni Tarantino. *Medicine* 94.49 (2015): e2225. *PMC*. Web. 15 Jan. 2017.
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5. V. Gamblin, A. Da Silva, S. Villet, and F. El Hajbi, "Prise en charge symptomatique de l'ascite maligne en phase palliative : place de la paracentèse et des diurétiques," Bulletin du Cancer, vol. 102, no. 11, pp. 940–945, 2015.

Q2	**What is the indicated puncture site for paracentesis?**
Patients	Patients elderly and/or frail and/or end of life indications in a palliative facility Frail, aged, end of life adults
Intervention	**Paracentesis on left lower quadrant**
Comparator	Paracentesis on right lower quadrant Paracentesis on midline
Outcome	Core outcome measures: Bleeding; Mortality (any cause); Quality of life.
Methodology	Systematic reviews Randomized controlled trials Cohort studies Registry studies
Extra	None

Studies:
No randomized controlled trials have been performed regarding this issue, mainly retrospective data. No systematic review regarding paracentesis technique was found [1].

Indications:
Paracentesis is indicated as a palliative procedure for ascites, in order to produce a temporary relief of symptoms. The drainage volume can be adjusted, depending on patient condition and severity of the disease, up to 20L per session.

The left lower quadrant if generally preferred, especially in "blind" procedures, due to the fact that the abdominal wall is thinner and the depth of the ascites is greater [4].

The midline abdominal wall may present collateral vessels [3]. Surgical scars should be avoided due to the fact that they are frequently associated with bowel (post-surgery adhesion).

Conclusions:
Although left lower quadrant is preferred as puncture site for paracentesis, literature data suggests that it can also be performed at right lower quadrant or midline, as there is no data that links puncture site to bleeding risks.

Ultrasound-guided paracentesis is also a safe procedure [2] and can improve accuracy of the procedure.

Erasmus+
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References:

1. Sharzehi K, Jain V, Naveed A, et al. Hemorrhagic complications of paracentesis: a systematic review of the literature. *Gastroenterol Res Pract* 2014; 2014:985141.
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4. Sakai H, Sheer TA, Mendler MH, Runyon BA. Choosing the location for non-image guided abdominal paracentesis. Liver Int 2005; 25:984
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