Introduction/Background MicroRNAs (miRNAs) are small non-coding RNA molecules regulating gene expression that may have diagnostic potential by being associated with different diseases, including epithelial ovarian carcinomas (EOC). However, there is a lack of consensus how to accurately quantify miRNA levels, which hinders their implementation in diagnostics. Real-time qRT-PCR is often considered as the golden method; however, the results might be biased by various handling of missing data and normalization approaches. Only a few studies have been published to date on the identification of endogenous miRNA controls in EOC. Therefore, our aim was to identify stable candidates based on own, previously published- and three public miRNA-microarray datasets and verify their stability in a new cohort of EOC patients. Moreover, our goal was to compare different missing data and normalization approaches to investigate their impact on the results.

Methodology Following RNA extraction from formalin-fixed paraffin embedded tissues from 80 high-grade EOC patients, a custom designed panel of 48 miRNAs was investigated by RT-qPCR and analyzed by applying various strategies regarding missing data (a listwise/pairwise deletion, mean substitution, replacing non-detects with a Cp value of 40, multiple imputation), choosing stable endogenous controls (GeNorm, BestKeeper, NormFinder, the comparative ΔCt method and ReFinder) and normalization based on endogenous controls, spike-ins or global mean.

Results We identified 20 endogenous control candidates by combining miRNA microarray data analyses of four datasets and literature screening. Among these candidates, hsa-miR-101-3p, hsa-miR-191-5p, and hsa-miR-193a-5p were subsequently validated as most stable in 80 EOC patients. Moreover, we present how different approaches of data handling affect results, e.g. common practice of setting missing Cp values to 40 might lead to large (likely false) differences in miRNA expression between patients.

Conclusion Our data demonstrated the challenge of miRNA qRT-PCR data analysis and the need for standardization if comparison/conclusions across datasets are performed.
Abstracts

Inoperable malignant bowel obstruction in advanced ovarian cancer: A retrospective analysis of prognostic radiological features in patients supported with parenteral nutrition

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Introduction/Background Malignant bowel obstruction (MBO) is common in advanced ovarian cancer (AOC). Surgery and chemotherapy are of limited benefit for most patients who present with diffuse intraperitoneal, platinum-refractory disease. Home parenteral nutrition (HPN) may improve survival and quality of life. Little is known about which radiological features correlate with survival, to support clinical decision-making in this patient group.

Methodology Two radiologists undertook independent retrospective reviews of Computed Tomography (CT) findings of 63 patients with high-grade AOC and MBO admitted to a single tertiary centre, supported with parenteral nutrition between April 2019 and December 2021. Predefined radiological parameters associated with MBO were assessed for all patients. Multivariate analysis incorporating clinical prognostic factors were performed using Cox proportional hazards, identifying which radiological features correlate with poorer life-expectancy.

Results Median survival was 95 days (24–470 days), with 6 patients alive at data-lock. 70% patients presented with platinum-resistant disease, 17% treatment naïve. Most patients presented with small bowel obstruction (n=41). 43% had no obstruction transition point, 22% presented without bowel dilatation, 35% with no change to bowel wall calibre. Radiological features correlating with poor survival on multivariate analysis were large bowel obstruction (HR 7.29, p=0.007), presence of solid abdominal visceral metastasis (HR 2.89, p=0.008) and largest bulk of disease ≥5 cm (HR 3.14, p=0.033). Features that did not correlate with survival were functional vs mechanical obstruction, bowel dilatation, bowel wall thinning or thickening, presence of mesenteric disease, ascites or pleural effusion.

Conclusion Aetiology of MBO in AOC, whether functional or mechanical, single-site, or multi-level, does not correlate with survival. Large bowel involvement, presence of bulky disease and solid abdominal visceral metastasis may be useful radiological markers of poor prognosis to support clinical decision-making when considering HPN.