Clinical Question:

In patients with borderline resectable pancreatic cancer (BRPC), does neoadjuvant (chemo) radiotherapy compared with no neoadjuvant treatment improve resection rates, negative margins and overall survival?

Evidence summary

Two meta-analyses (Festa et al., 2013, Tang et al., 2016) addressed the use of neoadjuvant treatment in patients with borderline resectable pancreatic cancer.

There are a wide range of neoadjuvant treatments available for patients with borderline resectable pancreatic cancer with a significant proportion involving radiotherapy.

Both studies addressed the outcome of resectability - a high proportion of borderline resectable pancreatic cancer patients went on to have surgery, and those that went on to surgery had a survival benefit.

Festa et al. (2013) carried out a meta-analysis of ten prospective studies with 182 participants. Following treatment, 69% of patients (95% CI: 56-80%) were brought to surgery and 80% (95% CI: 66-90%) of surgically-explored patients were resected. Eighty-three percent (95% CI: 74-90%) of resected specimens were deemed R0 resections.

The weighted mean of median survival amounted to 12.4 months (range: 9 to 16 months) for the overall cohort of patients, 22.0 months (range: 12-32 months) for those who were resected, and 9.7 months (range: 8-41 months) for unresected patients.

More recently, Tang et al. (2016) in a meta-analysis including 18 studies (some of which were included in the Festa meta-analysis) (n=959) found that the weighted frequency of those who underwent resection was 65.3% (CI 54.2% - 76.5%), and the proportion of R0 resection amounted to 57.4% (CI 48.2% - 66.5%). The weighted mean of median survival amounted to 17.9 months (range: 14.7 - 21.2 months) for the overall cohort of patients, 25.9 months (range: 21.1 - 30.7 months) for those who were resected, and 11.9 months (range: 10.4 - 13.5 months) for unresected patients.

The question of which neoadjuvant regimen is most appropriate is still unclear. The protocol for a randomised controlled trial (NCT01900327) to address this question has been published (Tachezy et al., 2014). The NEOPA study investigates the impact of neoadjuvant CRT on survival of resectable pancreas head cancer in a prospectively randomised manner.

Recommendation:
Patients with borderline resectable pancreatic cancer should have neoadjuvant therapy with consideration of including radiotherapy.

Quality/Level of Evidence: Moderate **Grade of recommendation:** Strong

Good practice point
It is critical that patients are discussed at a specialised national multidisciplinary team meeting.

Practical issues

- Dietician input is essential in patients with borderline resectable pancreatic cancer.

Abbreviations

BRPC	Borderline Resectable Pancreatic Cancer
CRT	Chemoradiotherapy

References

FESTA, V., ANDRIULLI, A., VALVANO, M. R., UOMO, G., PERRI, F., ANDRIULLI, N., CORRAO, S. & KOCH, M. 2013. Neoadjuvant chemo-radiotherapy for patients with borderline resectable pancreatic cancer: a meta-analytical evaluation of prospective studies. *Jop,* 14**,** 618-25.

TACHEZY, M., GEBAUER, F., PETERSEN, C., ARNOLD, D., TREPEL, M., WEGSCHEIDER, K., SCHAFHAUSEN, P., BOCKHORN, M., IZBICKI, J. R. & YEKEBAS, E. 2014. Sequential neoadjuvant chemoradiotherapy (CRT) followed by curative surgery vs. primary surgery alone for resectable, non-metastasized pancreatic adenocarcinoma: NEOPA- a randomized multicenter phase III study (NCT01900327, DRKS00003893, ISRCTN82191749). *BMC Cancer,* 14**,** 411.

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