

## **Benefit of adjuvant chemotherapy on recurrence free survival per consensus molecular subtype in stage III colon cancer**

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### **Abstract**

The consensus molecular subtype (CMS) classification divides colon tumors into four subtypes holding promise as a predictive biomarker. However, the effect of adjuvant chemotherapy on recurrence-free survival (RFS) per CMS in stage III patients remains inadequately explored. With this intention, we selected stage III colon cancer (CC) patients from the MATCH cohort (n = 575) and RadboudUMC (n = 276) diagnosed between 2005 and 2018. Patients treated with and without adjuvant chemotherapy were matched based on tumor location, T- and N-stage (n = 522). Tumor material was available for 464 patients, with successful RNA extraction and CMS subtyping achieved in 390 patients (surgery alone group: 192, adjuvant chemotherapy group: 198). In the overall cohort, CMS4 was associated with poorest prognosis (HR 1.55; P = 0.03). Multivariate analysis revealed favourable RFS for the adjuvant chemotherapy group in CMS1, CMS2 and CMS4 tumors (HR 0.19; p = 0.01, HR 0.27; p < 0.01, HR 0.19; p < 0.01, respectively), while no significant difference between treatment groups was observed within CMS3 (HR 0.68; p = 0.51). CMS subtyping in this non-randomized cohort identified patients with poor prognosis and patients that may not benefit significantly from adjuvant chemotherapy.