Propensity-Score Matched Cohort (Table 1):

- Fever in NDG n=628 (88.3%); SDG n=640 (69.6%) (p = 0.579)
- Median relative days of fever during neutropenia
  - NDG 13% (IQR 0.03–33); SDG 14% (IQR 0.03–13) (p = 0.454)

Primary outcome (Figure 1):

- No association between dietary regimen and relative days with fever during neutropenia; univariate model: OR 0.94 (p = 0.55), IRR 1.00 (p = 0.64); multivariable model: dietary regimen did not remain as covariate

Secondary outcomes (Table 2, Table 3):

- Bloodstream infections due to foodborne related pathogens NDG: n=0; SDG-4
- Foodrelated related pathogens in stool samples NDG: n=3 (Campylobacter coli, Salmonellae, Bacillus cereus); SDG: n=0 (p = 0.248), associated with diarrhea in one case
- No death were caused by foodborne related infections
- Median 28-day mortality NDG: 13.5 (IQR 8.8 – 32.5); SDG: 17 (IQR 10 – 29); p=0.118

Inclusion criteria: Patients with neutropenia < 500 µl longer than 5 days

Exclusion criteria: Allergic stem-cell transplantant

Primary outcome: Relative days with fever during neutropenia

Secondary outcomes: Incidence of infections due to foodborne pathogens, incidence of bloodstream infections, need for antibiotic treatment, diarrheae, nausea, and death

Covariates: Dietary regimen, characteristics of neutropenic episode, demography, underlying disease, comorbidities, administration of antibiotic or antinfectic prophylaxis, administration of steroids or growth factors, and incidence of radio-therapeutic interventions

Matching: Analysis in propensity score matched cohort

Association of covariates and primary outcome: Zero-inflated negative binomial regression, univariate and backward-stepwise multivariable model

Association of covariates and secondary outcomes: Binary logistic regression, univariate and backward-stepwise multivariable model

Study design: Retrospective cohort study based on the Cologne Cohort of Neutropenic Patients (CoCoNut)

Study period: 01/2004 – 12/2011


Background:

- Neutropenia is a major risk factor for infections in cancer patients
- Benefits of a neutropenic diet remain uncertain
- Restrictions of food and rigorous preparation rules may further increase malnutrition rates
- Since January 1st 2008: Replacement of neutropenic diet by a standard hospital diet; standard care hematology and oncology wards at the University Hospital of Cologne (UHC)
- Standard hospital diet comprises no categorical restrictions, while adherence to standard food safety guidelines is recommended

Methods:

- Statistical analysis: CoCoNut diet regimen: 1.00 (p = 0.64); SDG diet regimen: 0.83 (p = 0.461) for confirmed positive blood culture
- For infection endpoints: Negative binomial regression with log link
- For death endpoints: Poisson regression
- For days of fever: Negative binomial regression with log link
- Matched-pair analysis was used to estimate p-values

Conclusion:

In our comprehensive analysis of hospitalized high-risk cancer patients we did not detect a significant impact on infection incidence and patient outcome after replacing the neutropenic diet with a standard hospital diet. Thus, in our population, a standard hospital diet was safe for neutropenic high-risk cancer patients.