

A Pan-European Survey Relating to Cancer Therapy and Neutropenic Infections: Nurse and Patient Viewpoints

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BACKGROUND

- Patients undergoing myelosuppressive chemotherapy (CT) are at risk of neutropenia and subsequent infections.
- Febrile neutropenia (FN) is associated with increased morbidity and mortality risk. Indeed, a US study found that 1 in 10 patients who were hospitalised for FN died (1).
- FN and severe neutropenia can lead to CT dose delays and reductions, which can potentially compromise the efficacy of treatment and adversely impact survival outcomes in curative settings (2-5).

OBJECTIVES

- A pan-European survey was conducted to explore current perceptions and issues relating to cancer therapy and neutropenia/FN-related infections, in order to identify gaps in understanding between cancer patients and healthcare professionals.

METHODS

- Separate nurse and patient surveys were conducted by the European Oncology Nursing Society (EONS) and PatientView.
 - Nurses were identified by EONS.
 - Patients with various types of cancer were identified by patient advocacy groups.
- Participants completed online questionnaires, provided in the local language and designed to assess:
 - Whether patients are aware of the dangers of neutropenic infection.
 - How much nurses tell patients about the risk of neutropenic infection.
 - Whether patients at risk are offered prophylactic treatment to reduce neutropenia, FN and infection during CT.
- Percentages were calculated based on the number of responses to each question, or on the total number of respondents in the survey if more than one answer could be given. This represents an updated analysis since the submitted abstract.

RESULTS

- The surveys were conducted between September 2009 and December 2009 and included:
 - 217 nurses (Table 1) with an average caseload of 123-178 adult cancer patients per month, mostly within a national healthcare system (57%).
 - 473 patients (male 42%/female 58%; Table 2), mostly (59%) aged between 50-69 years.
- Patients in this survey were not the same patients being managed by the nurses in the survey. Thus, the geographical split and type of setting also differed between the two populations.

Table 1. Nurse Characteristics

	Number	%
Type of Nursing (n = 217)*		
Speciality Haematology	39	18
Oncology	115	53
Palliative Care	4	2
General Medical	31	14
Other	35	16
Specialist Training		
Postgraduate Qualifications** (n = 216)	146	68
EONS TITAN Course (n = 216)	43	20
Nursing Setting (n = 217)*		
Part of National Health System	124	57
Private Practice/Private Facility	37	17
Other	59	27
Country (n = 217)		
Austria	65	30
Belgium	5	2
France	17	8
Ireland	26	12
Italy	33	15
Spain	8	4
Sweden	3	1
UK	60	28

*Some respondents indicated > 1 category
**In cancer nursing, palliative care or haematology

Table 2. Patient Characteristics

	Number	%
Sex (n = 469)		
Male	198	42
Female	271	58
Age Range, Years (n = 464)		
< 20	26	6
20-29	9	2
30-39	24	5
40-49	80	17
50-59	131	28
60-69	142	31
70-79	52	11
Type of Cancer (n = 473)*		
Breast Cancer	140	30
Lymphoma	48	10
Lung Cancer	19	4
Gastrointestinal	19	4
Ovarian	8	2
Other	251	53
Chemotherapy (CT) Status (n = 442)		
Currently Receiving CT	65	15
Received CT in Last 12 Months	89	20
CT Completed > 12 Months Ago	231	52
Don't Know	57	13
Country (n = 466)		
Austria	8	2
Belgium	54	12
France	39	8
Germany	67	14
Ireland	4	1
Italy	29	6
Spain	11	2
Sweden	94	20
UK	160	34

*Some patients indicated > 1 category

RESULTS (continued)

Figure 1. Perceptions of the Impact of Neutropenia, Infections and Changes in Chemotherapy (CT)

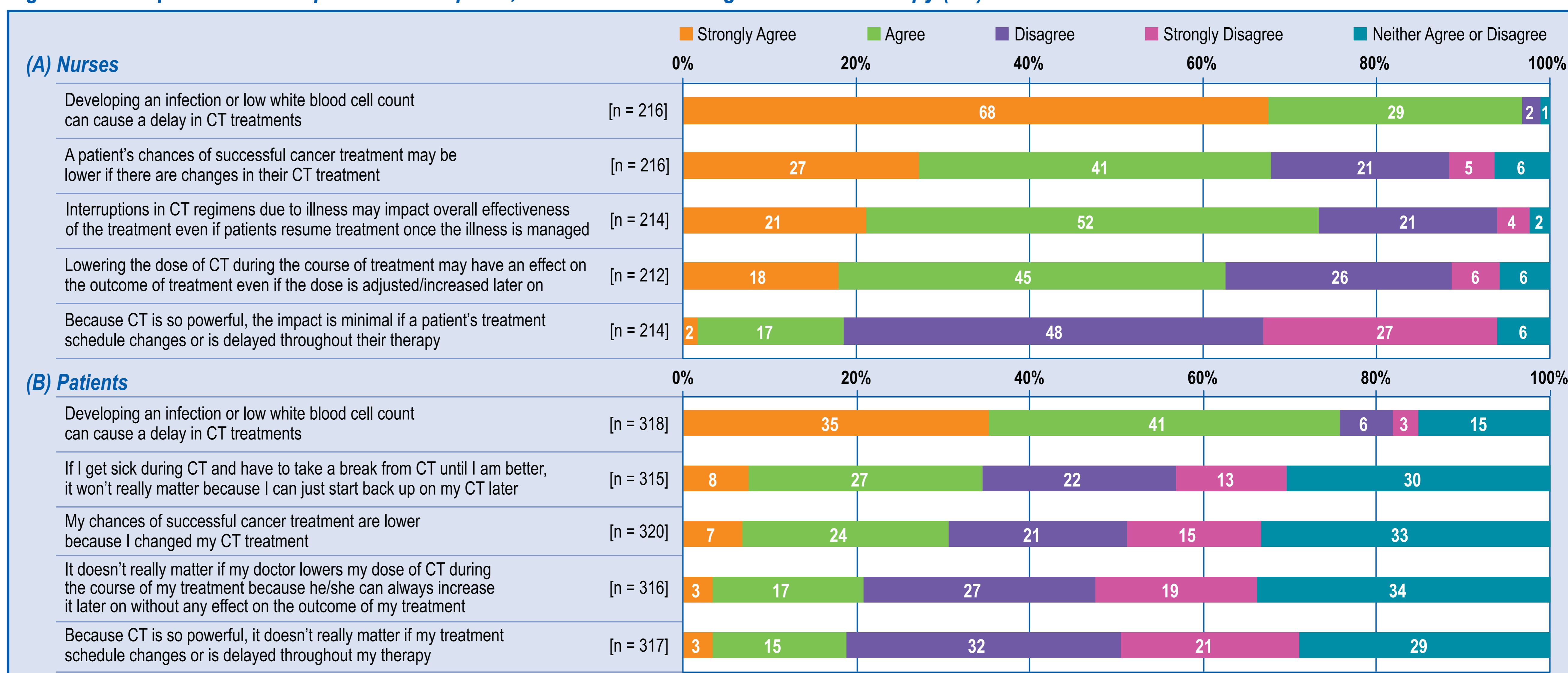
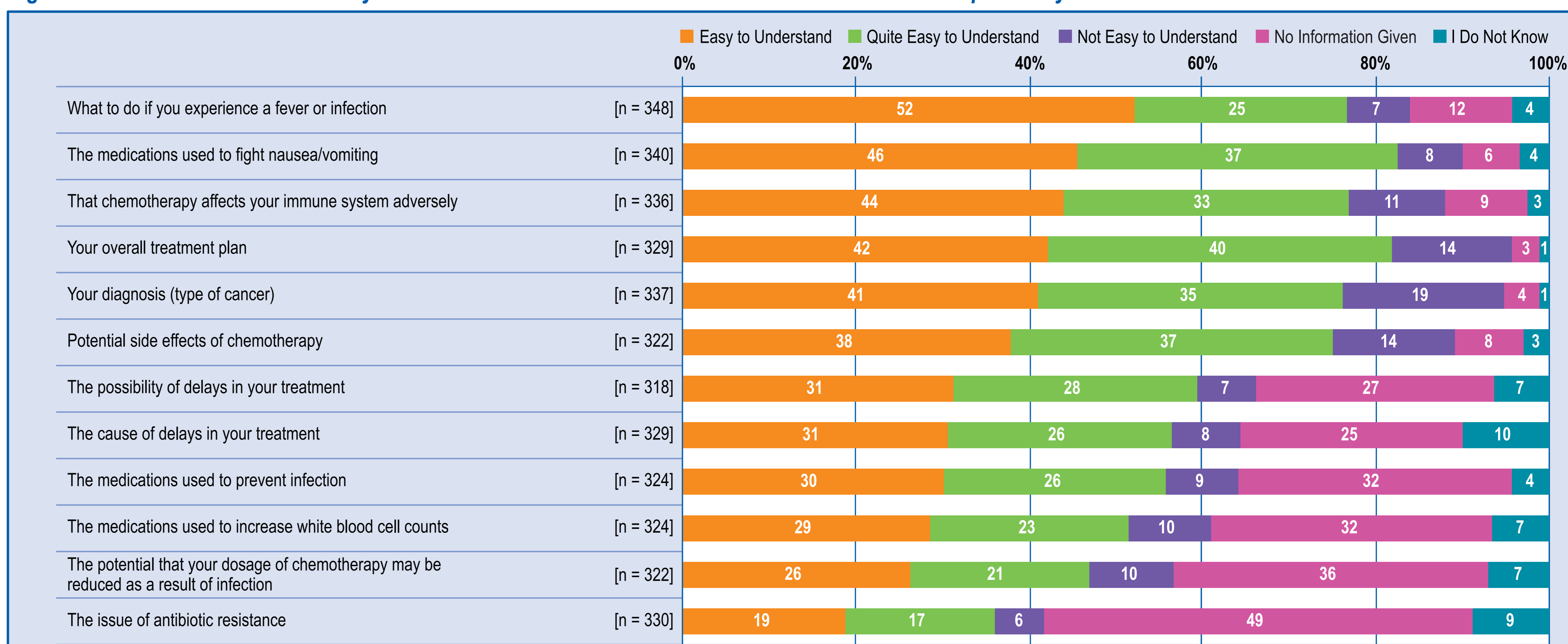


Figure 2. Provision of Information by Healthcare Professionals About Cancer and Infection as Reported by Patients



Awareness of Impact of Neutropenia and Infections

- When questioned about factors that may impact CT, 95% of nurses agreed that preventing infections and FN is extremely/very important in order to achieve a successful CT outcome:
 - 97% agreed that infection or low WBC count can delay CT (Figure 1A).
 - 73% felt that interruptions in CT may impact on effectiveness of treatment, while 68% said that treatment was less likely to be successful if there were changes in CT, such as reducing the dosage, delaying treatment or substituting drugs.
- However, many patients were unaware of the potential impact of delays and changes in their CT (Figure 1B) and/or believed that they were not always given easy-to-understand information regarding cancer and infection (Figure 2).
- Almost all of the nurses said that they, or other health professionals in their practice, discussed with patients their personal risk of developing infection or FN (97%; Figure 3) and how to minimise the risk (99%).
- However, a substantial proportion of patients said they did not recall (19%), or were not told (29%) about the risk of developing FN and 21% said they were not told about the risk of infection. Only 58% of patients said that their personal risk of developing infection was discussed with them before starting CT.

Experience of Neutropenia and Infection and Impact on Treatment

- Nurses reported treating an average of 5-9 infections associated with FN per month (Figure 4) and virtually all (99%) reported seeing some of their patients hospitalised with fever, infection and/or FN within the past year.
- When asked about the impact of their latest infection on their CT, 203 patients responded to the question. 37% said that they had to have their CT delayed/changed as a result of neutropenia, infection or FN. 13% said they had to go to the emergency room and 57% said they were hospitalised.

Prevention and Management of Neutropenic Infections

- 89% of nurses said that local and/or national guidelines were in place for managing CT-induced neutropenia and 82% said that a local and/or national antibiotic policy was in place for managing neutropenia.
- 91% of nurses said in CT patients at risk, they preferred to give treatment to reduce FN and infections rather than treating an infection once it develops.
- 91% of the nurses reported use of antibiotics and/or granulocyte colony-stimulating factors (G-CSFs) to reduce FN in patients undergoing myelosuppressive CT (Figure 5A), although most of them (85%) expressed some concern over patient concordance with FN prophylaxis.
- Less than 40% of the patients reported receiving antibiotics or medicines that increase WBC to reduce neutropenia and infections during their CT (Figure 5B).
- When asked which health professional was primarily responsible for treating their latest infection, less than 40% of patients said they were primarily treated by an oncologist (19%) or haematologist (14%). A significant proportion (13%) were treated by their GP/family doctor.

Figure 3. When Do Nurses or Other Health Professionals Discuss With Patients Their Personal Risk of Infection and Febrile Neutropenia (FN)?

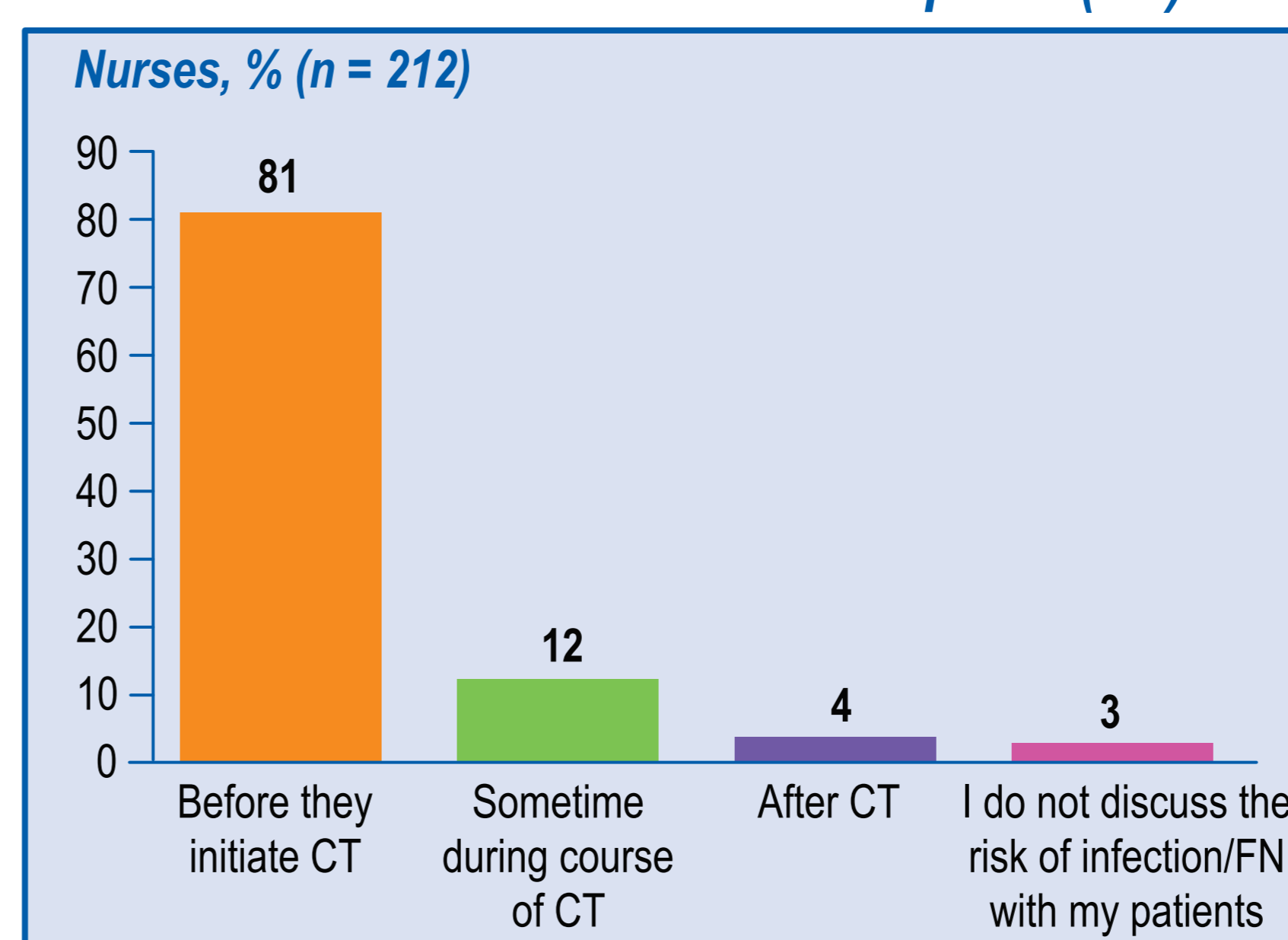


Figure 4. Number of Infections Associated With Febrile Neutropenia Treated by Nurses During a Typical Month

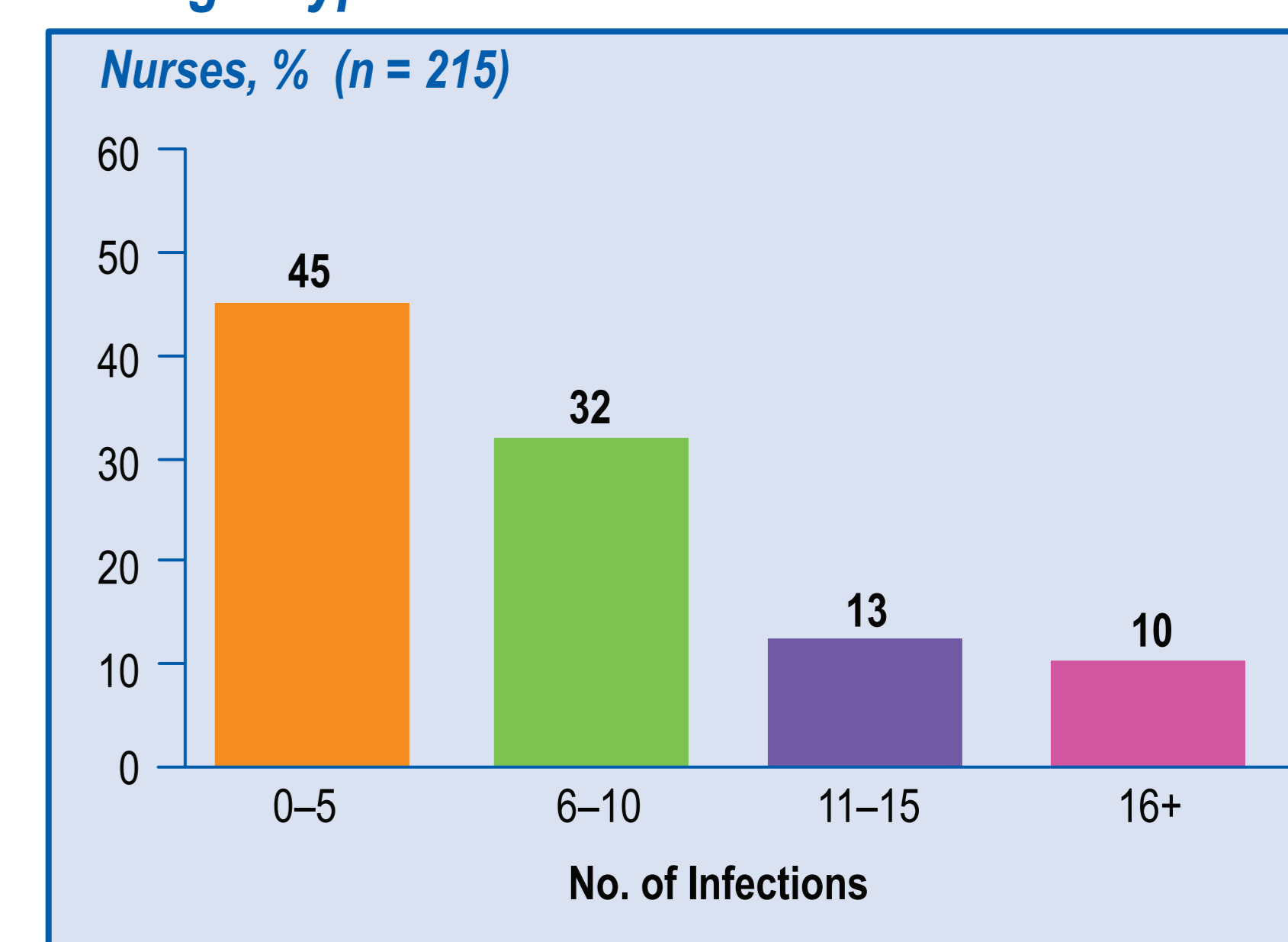
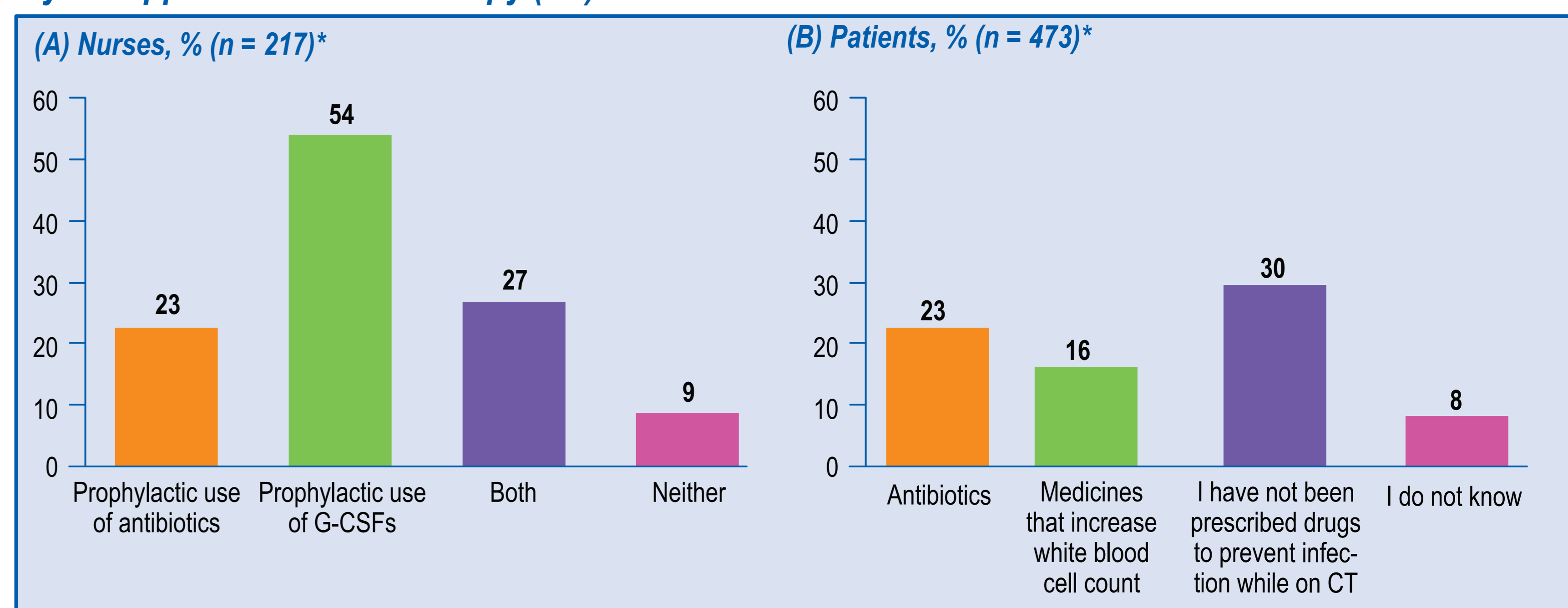


Figure 5. Use of Medication to Reduce Febrile Neutropenia or Infection in Patients Undergoing Myelosuppressive Chemotherapy (CT)



*Based on Total in Survey (some respondents indicated >1 category)

CONCLUSION

- These findings show that nurses recognise prevention of infection and FN as being important for achieving a successful outcome in patients undergoing CT.
- The patient survey relied on individual recall and differences in perceptions between the nurse and patient populations are partly attributable to differing treatment settings and countries. Also, there was a relatively low response rate to some questions. Nevertheless, results suggest that many patients do not understand, or are unaware of the risk of, developing neutropenia/FN infection and the potential impact of this on their CT and treatment outcome.
- Recommendations: Our results suggest that there may be a need for improvement in a number of areas of oncology care:
 - Communication between patients and healthcare professionals regarding CT-induced neutropenia/FN. Patients need to receive understandable and timely information.
 - Education/links for healthcare professionals looking after patients in the community.
 - Provision of prophylaxis against neutropenia.
 - Ensuring patient concordance with prophylaxis.
 - Access to oncologists/haematologists for patients who develop infection.

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