



P145 - Evaluation of an Infectious Disease Consultation Program in a German Tertiary Care Hospital

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Abstract

Purpose: To evaluate the impact of a newly implemented infectious disease (ID) consultation service on patient care and outcome, on antibiotic prescription and factors influencing adherence to recommendations.

Methods: Data from 260 consultations of the first six months of the ID consultation program were collected and evaluated. Consultation request, diagnostic results, treatment outcome and antibiotic recommendations were categorized. Diagnostic and therapeutic recommendations were assessed and rated regarding adherence and outcome. Statistical analysis was performed to identify factors influencing adherence and treatment outcome.

Results: A total of 251 valid consultations were studied. Most often, ID specialists were asked for further advice regarding an already started anti-infective treatment (N=131; 52%). In 54 of 195 (28%) first consultations, the ID specialist proposed a previously unconsidered differential diagnosis, which was later confirmed in 80% of these cases. Diagnostic and therapeutic recommendations were made in 190 (76%) and 240 (96%) of the consultations, respectively. A change of currently running treatment was recommended in 66% of consultations; 37% of recommendations were cost-saving and 26% cost-neutral. Compliance with diagnostic and therapeutic recommendations was rated as good by pre-specified criteria in 65% and 86%. Treatment outcome was influenced by adherence to diagnostic recommendations (P=0.012). Sixteen percent of the patients receiving consultations died during the same hospital stay.

Conclusion: Infectious disease specialist consultations help establishing a diagnosis and providing appropriate treatment in a severely sick patient population. Treatment outcome was better in cases of good diagnostic adherence to ID specialist recommendations.

Introduction

- Infectious diseases (ID) are among the most frequent causes of death; nosocomial infections and multi-resistant bacteria constitute serious challenges to modern healthcare.
- In German hospitals, infections are often treated by organ specialties and microbiologists. Clinical ID specialists and consultations are only offered in a minority of tertiary care hospitals.
- There is growing evidence showing that ID consultations can improve prognosis of patients with infectious diseases, as well as abbreviate the duration of treatment. This has been especially well documented in the field of Staphylococcus aureus infections.
- The German Federal Ministry of Education and Research funds clinical research groups for infectious diseases since 2000. After receiving funding as part of this program in 2007, an ID consultation service was initiated in 2008.
- We report our experiences with the establishment of an ID consultation service in a German tertiary care hospital.

Methods

- Currently 12 physicians in train and five board-registered ID specialists.
- Organization depicted in **Figure 1**.
- All requests processed within 24 hours.
- Retrospective chart review of all consultations during the first six months of the ID consultation service (January until July 2008)
- Complete electronic documentation of patient files and ID consultation recommendations.
- Classification of all consultations into different request and recommendation categories.
- Exploratory statistical correlation of recommendations and recommendation adherence with treatment outcome.

Figure 1: Workflow infectious disease consultation service

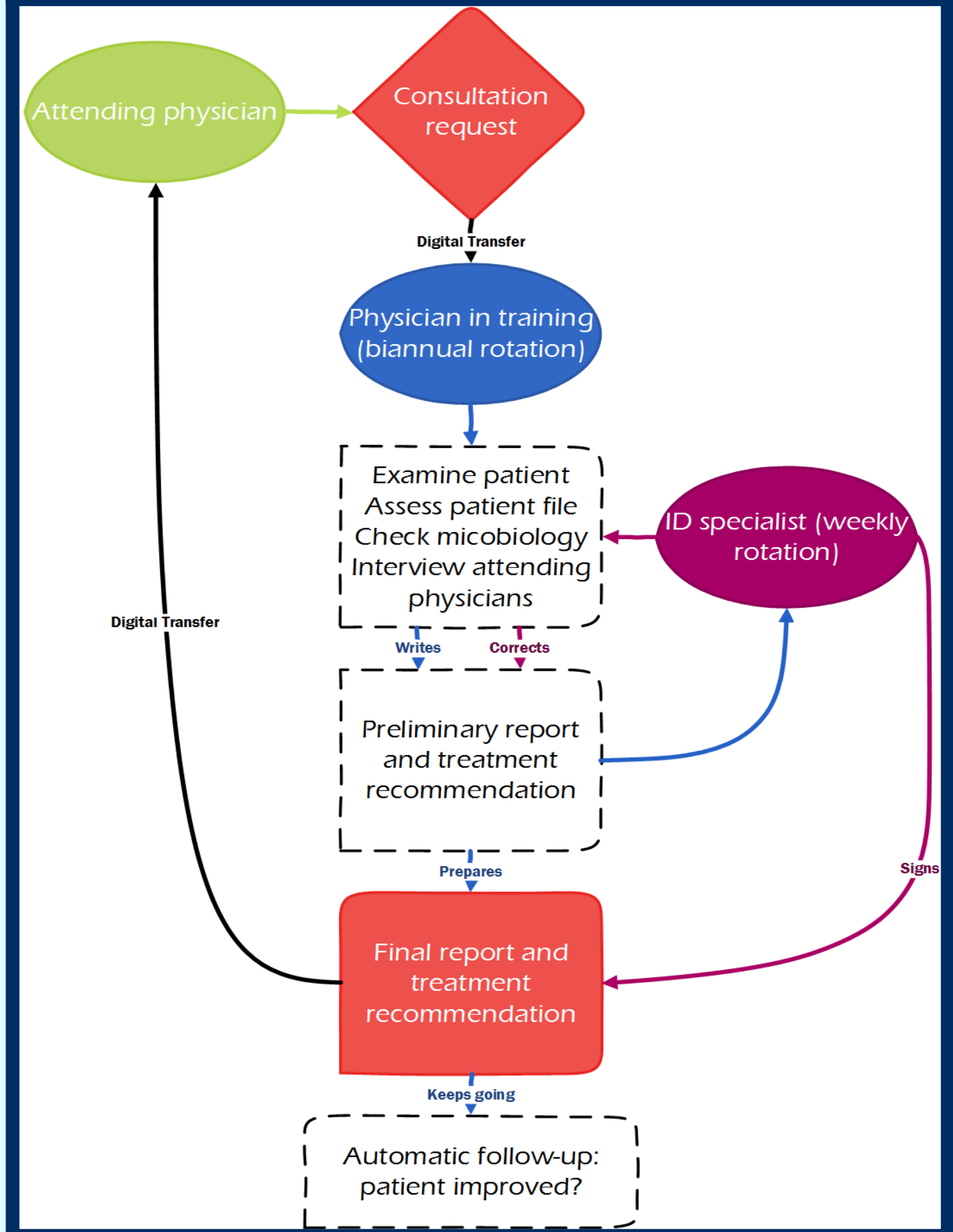


Figure 2: Underlying conditions of patients

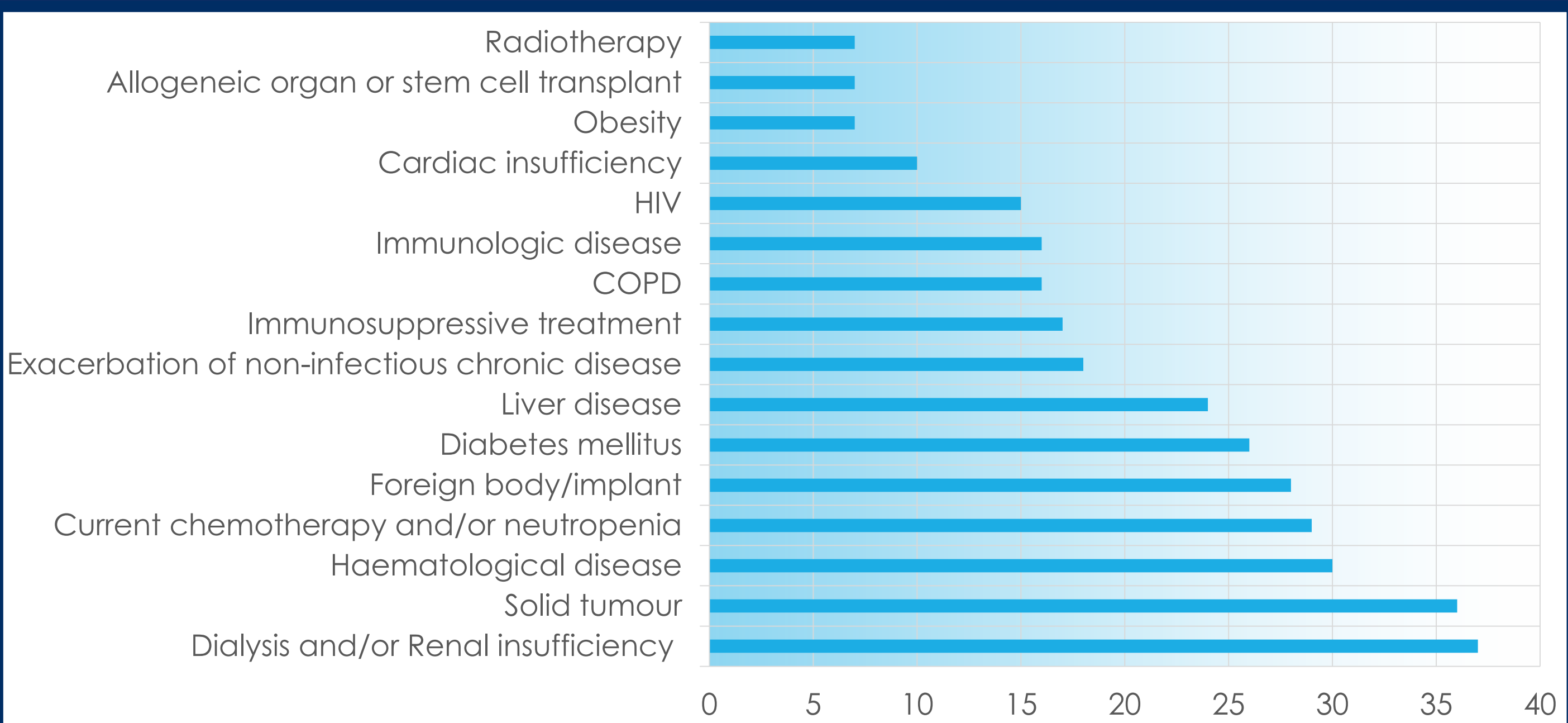
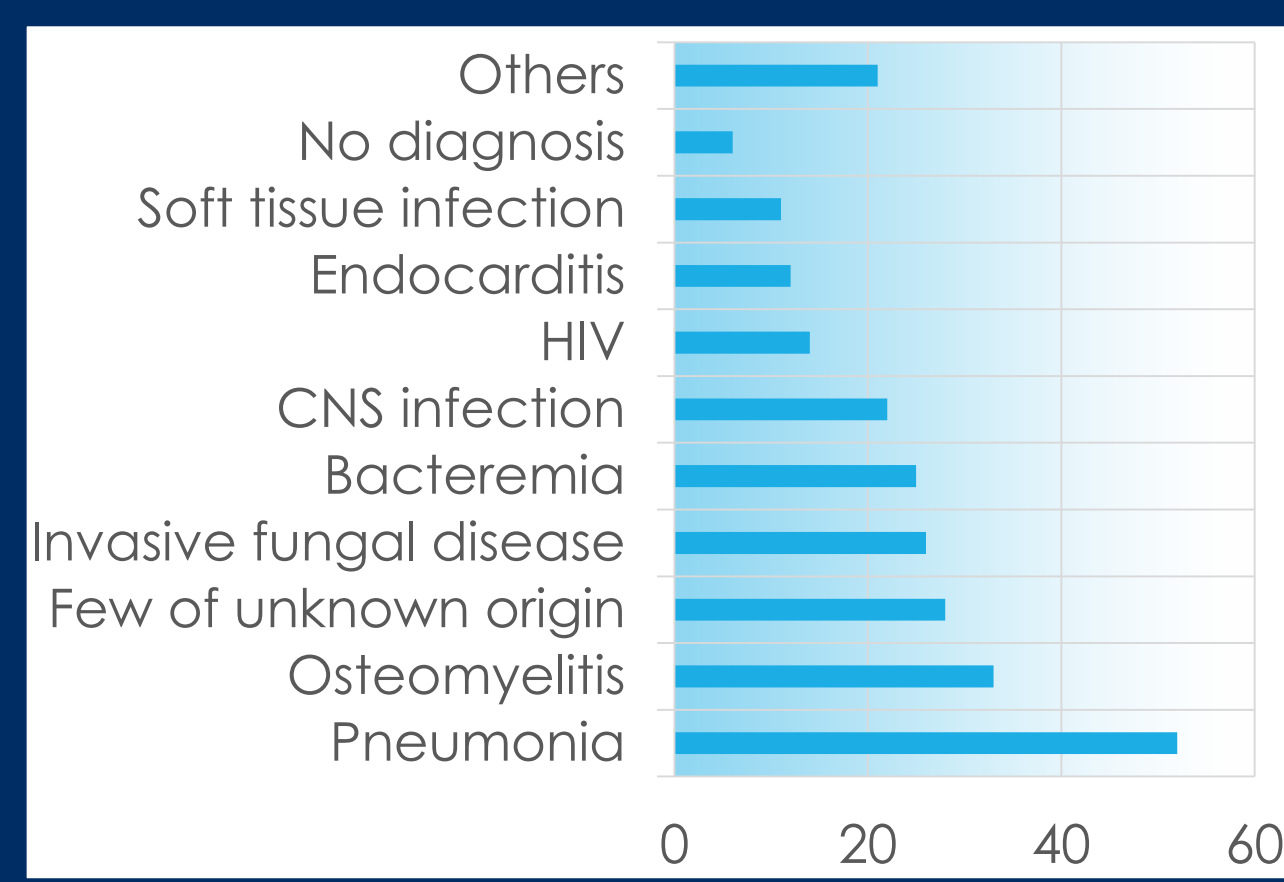


Figure 3: Result of ID consultation



Results

- 251 consultations on 183 patients included; age median 61 years (range 0.8-98), duration of stay median 24 days (range 0 - 173), gender male 113 (61.7%), female 69 (37.7%), transsexual male -> female 1 (0.5%).
- Average time from request to final written consultation 0.86 days.
- Additional diagnostic tests proposed in 190 (76%) of consultations, leading to identification of new infection in 32 (17%).
- Change of current treatment was recommended in 158 cases (66%).
- Anti-infective spectrum of activity was broadened by 64 (27%) of consultations, reduced by 70 (29%), unchanged by 72 (30%). Twelve cases could not be rated.
- Costs of anti-infective drugs costs were reduced by 88 (37%) recommendations, remained unchanged by 63 (26%), and were increased by 67 (28%).
- For 190 diagnostic recommendations, adherence was rated as good in 124 (65%), moderate in 32 (17%), and poor in 31 (12%).
- Univariate analysis revealed significant influence of requesting clinic on adherence to treatment recommendations (p=0.031, two-sided χ^2 -test).
- Final outcome of the 195 medical conditions leading to a consultation request was response (N=96, 49%), stabilization (N=72, 37%) or progressive disease (N=17, 9%).
- Outcome was significantly associated with diagnostic adherence (p=0.012, Fisher's exact test).
- Twenty-nine of the 183 patients (16%) died during the same inpatient stay.
- Of these, 14 (48%) deaths were considered to be related to the infection for which the consultation was requested, one (3%) related to a subsequent infection emerging after the consultation, 12 (41%) deaths were of non-infectious cause and 2 (7%) deaths remained of unknown cause.

Figure 4: Requesting departments

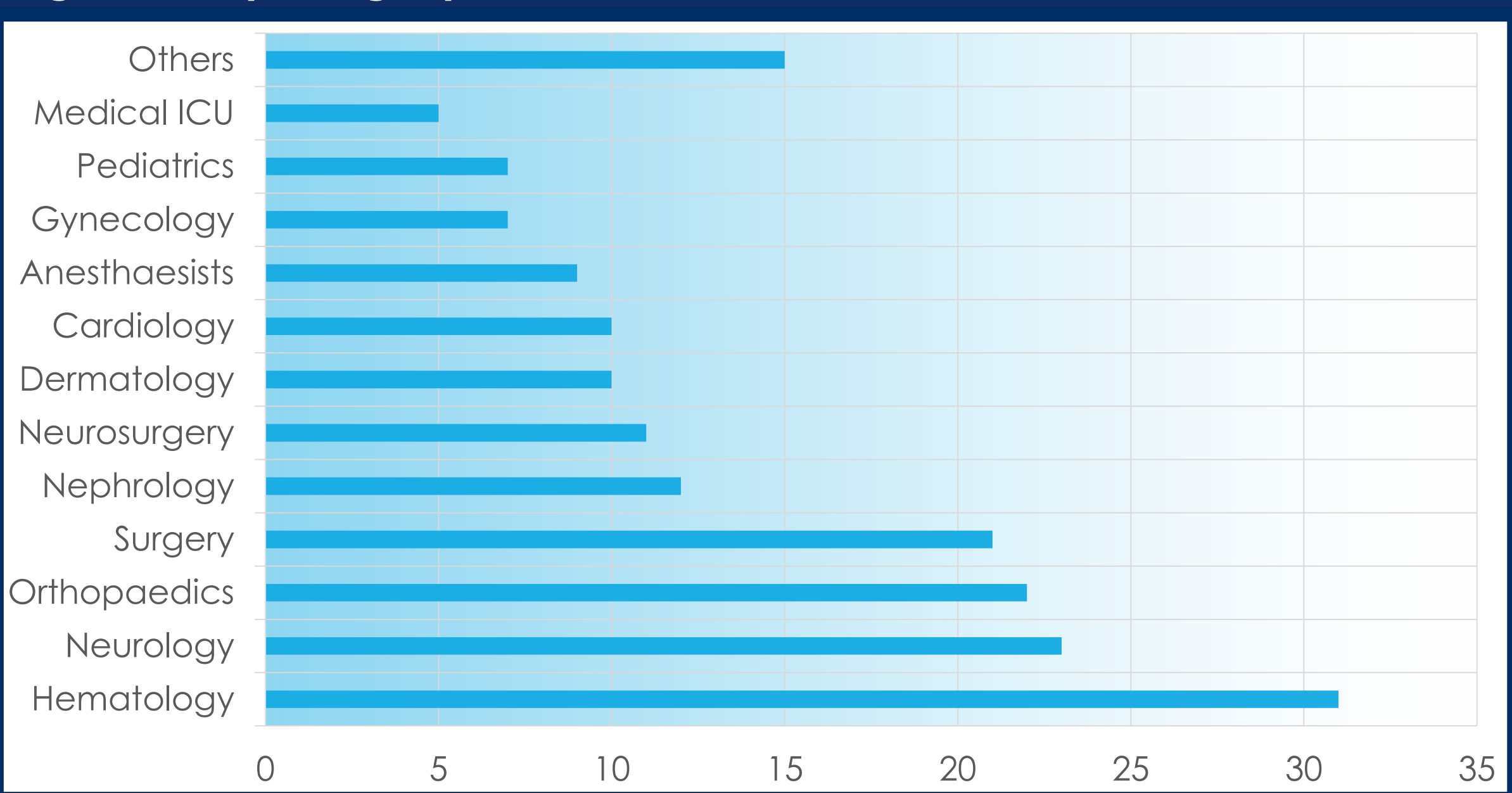
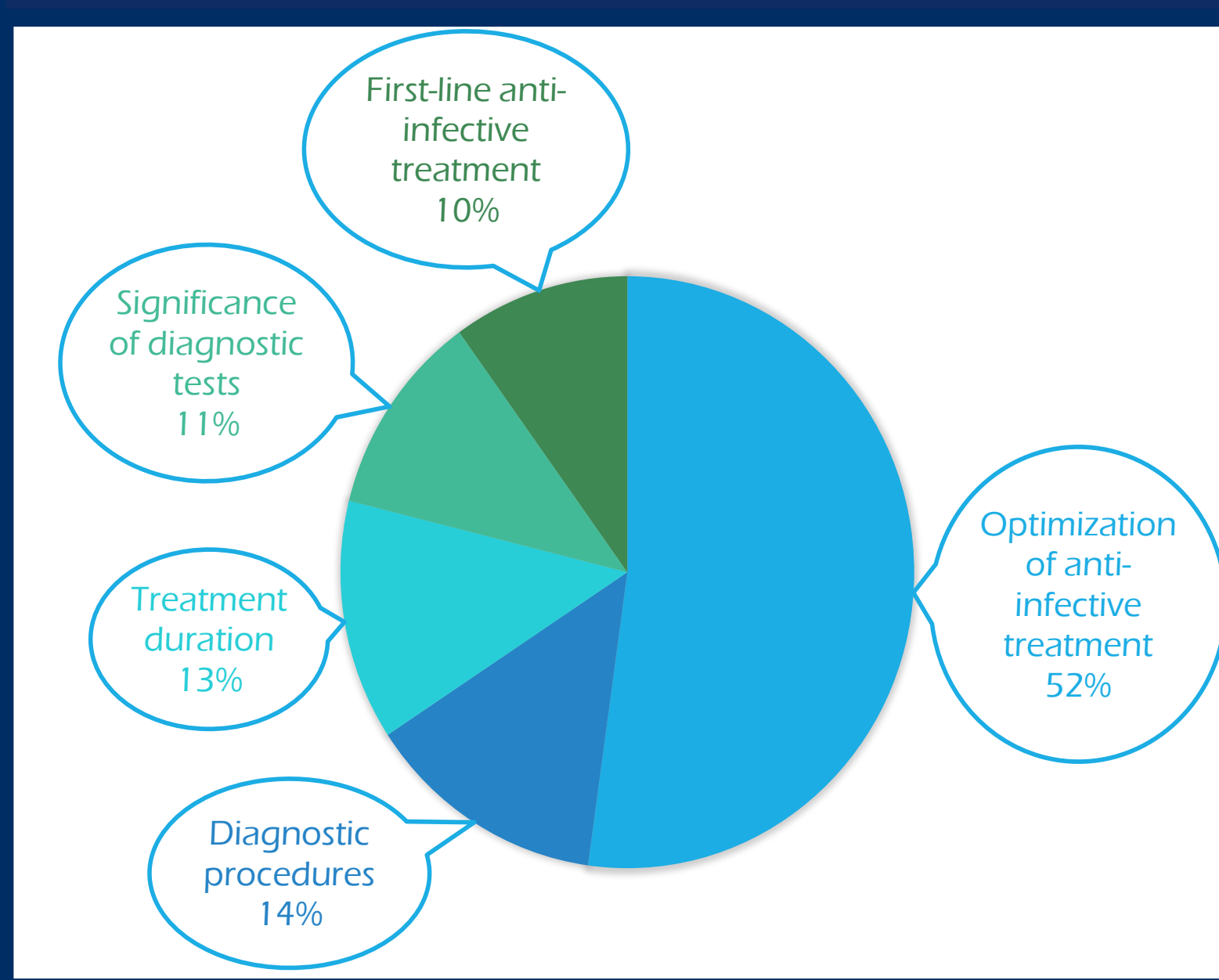


Figure 5: Overall topic of infectious disease consultation



Conclusion

- Most consultation requests concerned therapeutic issues.
- The overall adherence rate of 74% is in line with earlier studies on comparable issues.
- Consultations were requested for a severely sick patient population. Most patients were already inpatients for more than 12 days before the consultation and the mean duration of inpatient stay was 24 days. 16% of the patients died during the same inpatient stay, with some dying within 48 hours of the consultation.
- Earlier consultation requests might have further improved patient outcome.
- This study was limited by its retrospective noninterventional design and the lack of a proper control group. Future trials should try to overcome these limitations by identifying a control group of similar patients treated without ID consultation and also by collecting standardized feedback from the consulted physicians.
- This study describes the establishment of an infectious diseases consultation service and its favorable impact on patient care and patient outcome in a severely ill patient population.

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