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Infection Incidence, Timing, And Predictors In Newly Diagnosed Multiple Myeloma: A Real-world Retrospective Cohort Study

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INTRODUCTION

Multiple myeloma (MM) is the most common plasma cell malignancy and accounts for approximately 10% of hematologic cancers. Immune dysfunction in MM is multifactorial, including hypogammaglobulinemia, bone marrow impairment, and treatment-related cytopenias. Infections occur more frequently than in the general population and represent a major cause of early morbidity and mortality, particularly during the first months after diagnosis (1,2).

To evaluate the incidence, timing, and clinical predictors of infections in patients with newly diagnosed MM receiving induction therapy in a real-world setting.

METHODS

This retrospective cohort study included 161 patients with newly diagnosed MM who received induction therapy at a tertiary center between 2016 and 2024. Eligible patients were ≥ 18 years old, treatment-naïve, received bortezomib- or lenalidomide-based regimens, and had at least 6 months of follow-up. Infection timing was categorized as early (0–3 months), intermediate (3–6 months), and late (6–12 months). Statistical analyses included chi-square or Fisher tests, Mann-Whitney U tests, and multivariable logistic regression.

RESULTS

The median age was 64 years and 59% were male. Within the first year, 82 patients (50.9%) experienced at least one infection. Infection incidence was highest during the first 3 months (27.3%), followed by 3–6 months (15.5%) and 6–12 months (14.3%) ($p=0.004$). Pneumonia (34.1%) and urinary tract infections (26.8%) were most common. Multivariable analysis identified advanced ISS stage (OR 3.83), diabetes mellitus (OR 3.64), and chronic kidney disease (OR 6.01) as independent predictors of infection. Patients ≥ 75 years had higher infection incidence and one-year mortality.

Figure 1. Infection Incidence, Etiology, and Hematologic Associations

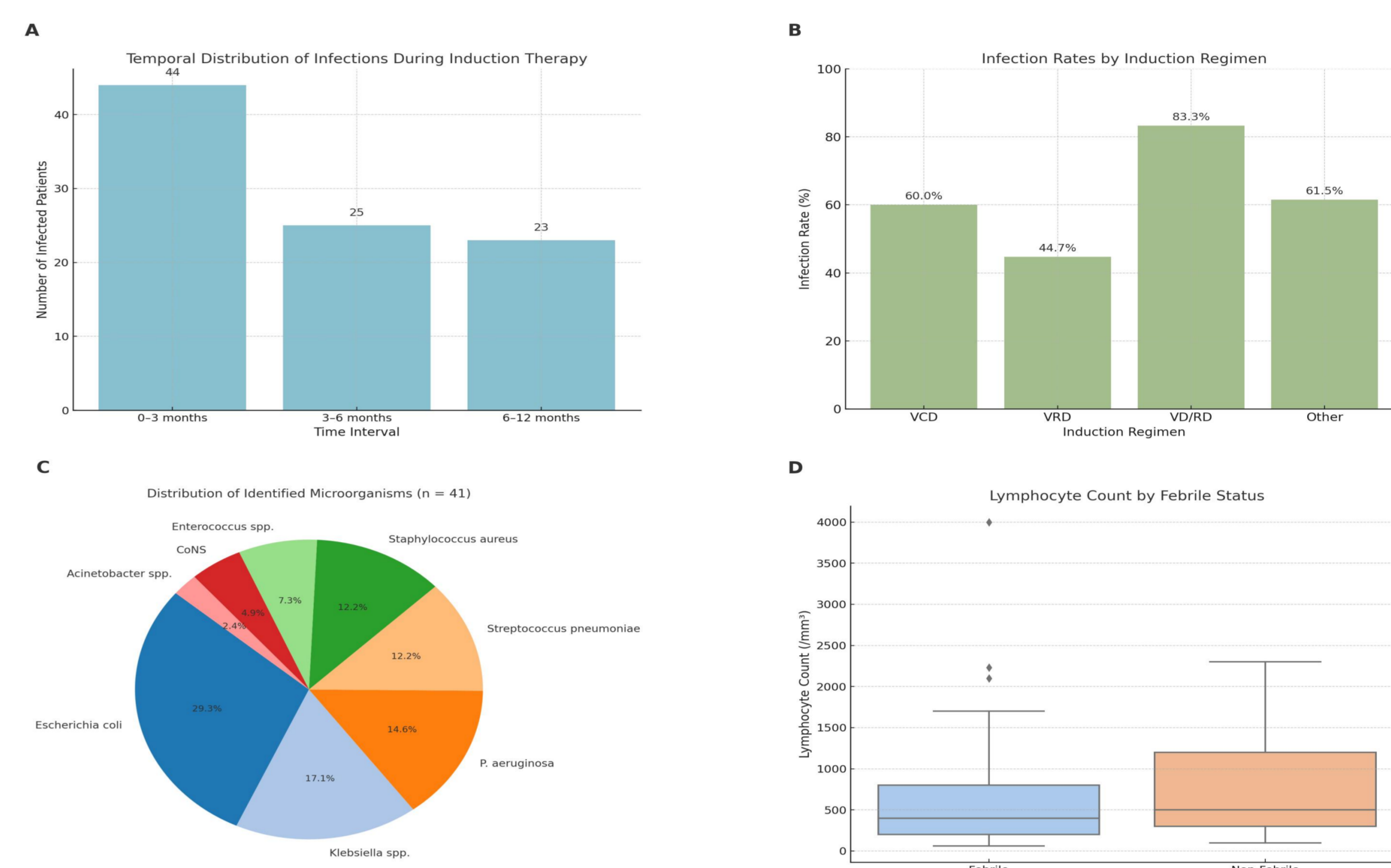
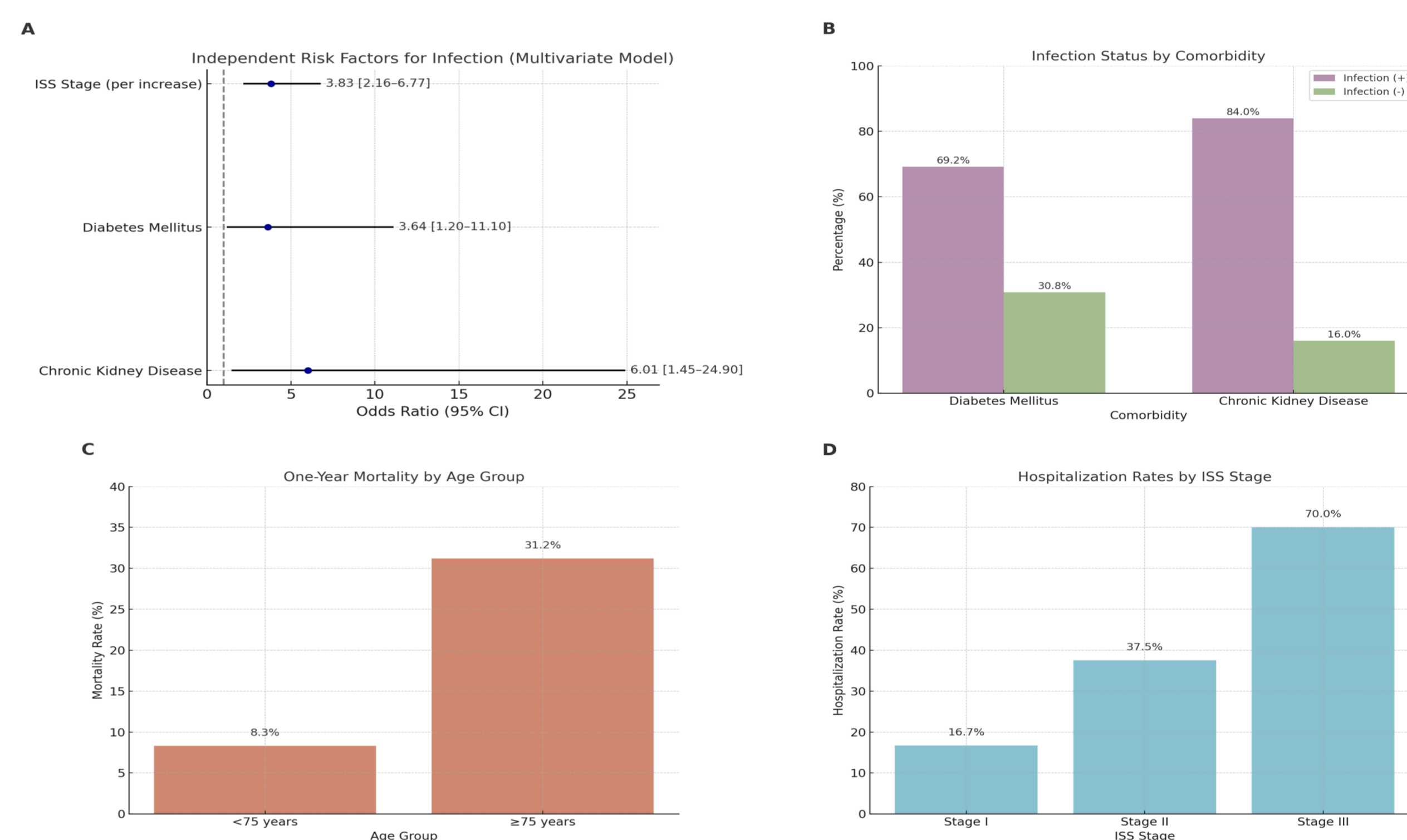


Figure 2. Infection and Mortality Risk by Clinical Parameters



CONCLUSION

Infections are common in newly diagnosed MM, particularly during the first three months of induction therapy. Advanced disease stage and comorbidities significantly increase infection risk. Early risk stratification using simple clinical parameters may guide personalized infection prevention strategies (3).

REFERENCES

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