ANTIBACTERIAL PROPHYLAXIS

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RISK STRATIFICATION The identification of factors influencing the onset of infectious complication in HMs undergoing chemotherapy is one of the most important strategies in current clinical practice. The good knowledge of these parameters is useful for a better identification of those patients considered at the highest risk and for define the most appropriate surveillance procedures or preventive strategies. Importantly, in HMs these factors can be frequently upgraded due to the frequent changes in clinical practice and treatment approaches that continuously modify the host condition	
Low risk: expected duration of neutropenia (ANC < 500/mmc) <7 days **High risk**: expected duration of neutropenia (ANC <500/mmc) >7 days	
QUESTION	**RECOMMENDATION**
In which risk categories is antibacterial prophylaxis indicated?	**Low risk** –generally not recommended (consider in elderly low risk patients treated with cytostatic therapy with high baseline infection rate) **High risk** - recommended
Which are the drugs of choice for antibacterial prophylaxis?	Levofloxacin (500 mg qd) or Ciprofloxacin (500 mg bid) should be preferred
Should a gram-positive active agent be added to quinolones?	Addition of a gram-positive agent to quinolones is discouraged
Should antibiotic prophylaxis be initiated at the beginning of	Start of prophylaxis at the beginning of chemotherapy, before the onset of neutropenia, may be considered in view of a presumably increased intestinal decontamination effect. However, it should be considered that several chemotherapy

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chemotherapy or by the onset of neutropenia?	drugs (i.e. vinca alcaloids, cyclophosphamide, etoposide, daunorubicin) and tyrosine kinase inhibitors are substrates while quinolones (in particular ciprofloxacin) are moderate inhibitors of the CYP3A4 enzymes. Considering the possibility of clinically relevant drug-drug interactions, the co-administration of quinolones with CYP3A4 substrates should be carefully considered (in particular, to start quinolone prophylaxis after discontinuation of chemotherapy). In AML patients undergoing 3+7 chemotherapy with daunorubicin antibiotic prohylaxis may be started after discontinuation of the anthracycline. The co-administration of antibiotic prophylaxis and cytosine arabinoside alone is not contraindicated.
When should antibacterial prophylaxis be stopped?	When ANC > 500/mmc for 2 days or concomitantly with the introduction of large spectrum antibiotic therapy. Introduction of selective Gram+-directed antibiotic therapy is not an indication to stop antibiotic prophylaxis.
What is the appropriate antibacterial prophylaxis in patients with multi-drug resistant gram-negative colonization?	**Expert opinion** Recent emergence of infections by multi drug resistant (MDR) gram negative bacteria (i.e. carbapenem resistant enterobacteria , CRE) particularly in certain geographic areas (as Italy and Greece), raises the problem of the lack of efficacy of prophylaxis with fluoroquinolones or even their possible role in the selection of infections by MDR bacteria. In patients with intestinal colonization by MDR bacteria (in particular carbapenem resistant *Klebsiella pneumoniae*) prophylaxis with quinolones is not presumably effective. In these cases, the use of oral gentamycin or oral colistin as intestinal decolonization has been considered, however, in view of the lack of data, this practice cannot be recommended in the hematological population. The expert panel is of the opinion that it is necessary to re-evaluate the role of fluoroquinolones prophylaxis in high-risk neutropenic patients in areas with high rate of MDR gram negative bacteria, possibly with appropriate clinical trials.

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