Low-intensity induction in acute myeloid leukemia. Always in the patients' best interest?

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Low-intensity induction in acute myeloid leukemia. Always in the patients' best interest?

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The amount of time patients with acute leukemia spend in a healthcare setting is an aspect that is frequently ignored. There are several ways to measure patient healthcare engagement. These range from simply calculating the percentage of days patients interact with healthcare, to calculating the percentage of hours spent in a healthcare setting to even adding commute time. When evaluating low intensity therapies for AML, emphasis is usually placed on the inpatient (IP) vs. outpatient management of patients. In this issue, Jensen and colleagues address the issue of the amount of time patients with AML treated with low intensity therapy spend in a healthcare setting(1).

The investigators calculated the proportion of days spent at home (PDH) for patients with AML treated with azacitidine ± venetoclax (AZA ± VEN) across the University of North Carolina Health System using electronic health records (HER). PDH was calculated as the number of days patients were not engaged in cancer care divided by the total number of days. Days engaged in cancer care included admission to the hospital for any reason, emergency department visits for any reason, and oncology/infusion clinic appointments. The study included 113 patients with 44 and 54 patients receiving AZA and AZA + VEN respectively. The overall median PDH was 0.63 with an increase in PDH over time. The PDH was 51%, 64% and 77% for patients surviving at month 1, 3 and 6. To put this in perspective, patients with breast cancer stage I-III have PDH of 97%(2) and 88% for stage I lung cancer(3) The authors found no difference between patients who received venetoclax vs no venetoclax, remission vs. no remission and good vs. poor prognostic factors. However, these comparisons may not be accurate due to small sample size and different patient characteristics. In addition they are less clinically relevant given that AZA + VEN is the standard of care now for all patients with AML. In fact this is reassuring that adding venetoclax does not decrease PDH.

IP hospital stay increased with increasing distance to the hospital. This is not an unexpected finding as we are more likely to admit patients who live farther away and do not have adequate supportive care close to their homes.

The more important comparison which is not reported here is the difference between high intensity (e.g 7+3) and low intensity (e.g. AZA + VEN). In most institutions(4), all patients receiving intensive induction chemotherapy are admitted to the hospital for approximately 4 weeks. This is followed by consolidation chemotherapy for 3 cycles with supportive care (approximately 3-5 days chemotherapy with 3 times per week visits for lab checks and possible transfusions). If patients proceed to oral maintenance therapy after that the frequency of lab checks and office visits would range from 2-4/month. Based on this scenario, the estimated PDH is 0%, 65% and 90% for month 1, month 2-4 and month 5 thereafter respectively for patients receiving intensive induction chemotherapy not proceeding to alloHCT.

So clearly AZA + VEN is a step in the right direction to increase PDH especially during induction. Following induction and for patients who are in remission we need to think of ways to decrease the
amount of time patients spend in the health care setting. Patients with AML engage in cancer care for multiple reasons: inpatient hospital stays, outpatient treatment, outpatient clinic visits, and outpatient supportive care appointments.

To reduce inpatient hospital stays, intensive induction chemotherapy can be administered in the OP setting. This approach is feasible in a select group of patients, in select institutions that can provide intensive OP monitoring and support. In that setting, less than half the patients are eligible for OP intensive therapy. In addition, patients still spend a considerable number of days evaluated in a health care setting for labs and possible transfusions. For low intensity therapy, home administration of chemotherapy e.g. subcutaneous cytarabine (SQ) or possibly SQ AZA would increase PDH. In addition, the development of oral substitutions will also increase PDH.

To reduce the OP supportive care visits, home monitoring of labs and home transfusions is a possibility. Logistically this is difficult as it requires significant resources including home nursing, early and systematic lab collections and close OP monitoring. Finally, the implementation of technology for remote visits, remote blood collections and vital sign monitoring is an important under utilized tool that has the potential to significantly increase PDH, reduce cost and improve patients quality of life.

References.


Legend to figure

AV: Azacitidine + venetoclax. Breast cancer data is median over 18 months. Lung cancer data is median in first 60 days. Intensive induction data is an estimate.
Breast Cancer Stage I-III: 97%
Lung Cancer Stage I: 88%
Azacitidine + venetoclax month 1: 51%
Azacitidine + venetoclax month 3: 64%
Azacitidine + venetoclax month 6: 77%
Intensive Induction month 1: 0%
Intensive induction month 2-4: 65%
Intensive induction month 5 and beyond: 90%