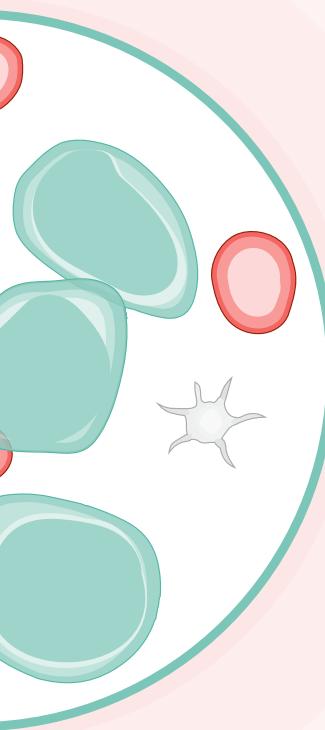


## AML POSES A CRITICAL CLINICAL CHALLENGE



### A growing global burden

Acute myeloid leukemia (AML) is the most common acute leukemia in adults, accounting for **~23.1% of all leukemia cases worldwide** (2017) <sup>[1]</sup>

It is highly aggressive with poor survival outcomes:

- ▶ 5-year relative survival: **32.9%** <sup>[2]</sup>
- ▶ With current SOC, this falls to **<10-15%** in older patients ( $\geq 60$  years) <sup>[3]</sup>
- ▶ Once patients relapse, median overall survival drops **<6 months** <sup>[4]</sup>

The global burden has escalated over recent decades, with morbidity and mortality continuing to rise <sup>[5]</sup>:

In the US alone, projections for 2025 estimate **~22,010 new diagnoses** and **~11,090 deaths** <sup>[6]</sup>



Median age of diagnosis:  
**68 years** in US <sup>[7]</sup>



Incidence higher **in men** <sup>[5]</sup>



Most common potential risk factors related to AML:  
**smoking, previous chemo- or radiotherapies, history of blood disorders, genetic disorders** <sup>[5]</sup>

These poor outcomes are driven by limited treatment options and the underlying complexity of AML biology.

# COMPLEXITY OF THE DISEASE



Similarity between AML blasts and normal hematopoietic cells <sup>[10]</sup>



Genetic and molecular heterogeneity <sup>[10]</sup>



Clonal evolution and therapy resistance <sup>[11]</sup>



Bone marrow niche protects leukemic cells <sup>[12]</sup>

## What exactly is AML?

AML is <sup>[8,9]</sup>

- ▶ A blood and bone marrow cancer that predominantly impacts older adults
- ▶ A heterogeneous and malignant clonal disorder of the bone marrow/hematopoietic system
- ▶ Driven by chromosomal rearrangements and gene mutations in hematopoietic stem and progenitor cells
- ▶ Characterized by an accumulation of undifferentiated myeloid blasts
- ▶ Associated with impaired production of normal blood cells

# THE CURRENT TREATMENT LANDSCAPE

## Types of treatment available



## Where current therapies fall short

Survival is poorest in **older** (<15% 5-year survival in patients  $\geq 60$  years) <sup>[3]</sup> **and R/R AML patients** (OS <6 months) <sup>[4]</sup>

Yet treatment choices remain limited

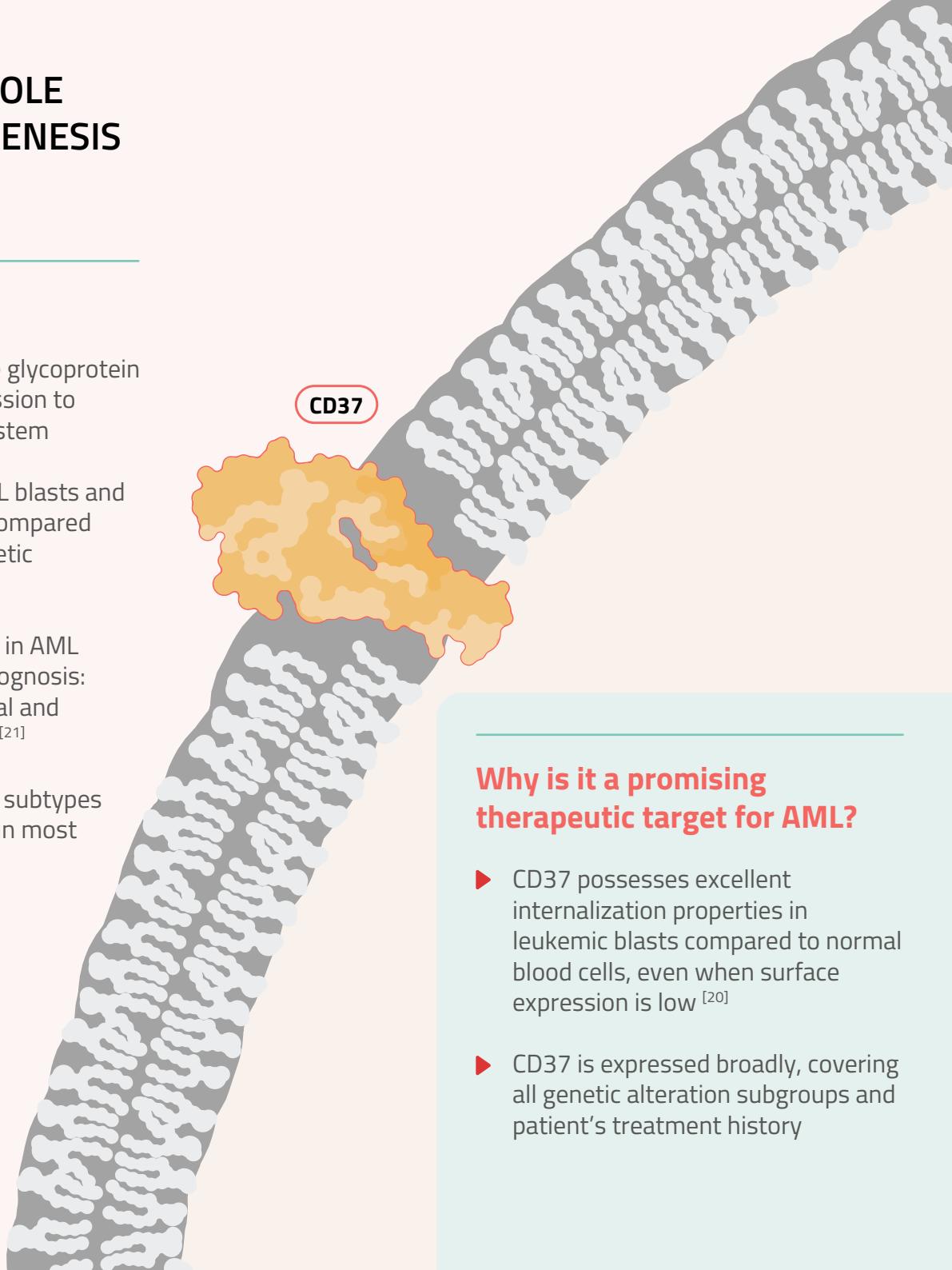
**~30–35%** relapse rates in younger patients with favorable risk factors, but **~80%** in older patients with adverse risk factors <sup>[16]</sup>

More than **50%** of patients with AML are ineligible for intensive chemotherapy regimens <sup>[17]</sup>

# CD37 PLAYS A ROLE IN AML PATHOGENESIS

## CD37 expression

- ▶ CD37 is a cell-surface glycoprotein with restricted expression to the hematopoietic system
- ▶ Overexpressed in AML blasts and leukemic stem cells compared to normal hematopoietic stem cells <sup>[18–20]</sup>
- ▶ Prognostic biomarker in AML related to the poor prognosis: shorter overall survival and disease-free survival <sup>[21]</sup>
- ▶ Expressed in multiple subtypes of AML <sup>[18–20]</sup> – found in most primary AML blasts



## Why is it a promising therapeutic target for AML?

- ▶ CD37 possesses excellent internalization properties in leukemic blasts compared to normal blood cells, even when surface expression is low <sup>[20]</sup>
- ▶ CD37 is expressed broadly, covering all genetic alteration subgroups and patient's treatment history

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