Personalized Medicine in Headache Care:
Tailoring Treatment Approaches

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Disclosure of Conflict of Interest

I have no conflict of interest regarding

this presentation.

Learning objectives-1

1. **Define the principles of personalized medicine** and explain their relevance to the diagnosis and management of primary headache disorders, with an emphasis on migraine.

2. **Describe the clinical heterogeneity of headache disorders** and its implications for individualized treatment planning and therapeutic decision-making.

3. **Identify recent advances in acute and preventive pharmacologic therapies** (e.g., triptans, gepants, ditans, anti-CGRP monoclonal antibodies), and discuss how these can be tailored to specific patient profiles.

Learning objectives-2

4. **Recognize clinical, phenotypic, and biological predictors** of treatment response in headache medicine, including the emerging role of biomarkers and omics-based stratification.

5. **Apply the P4 medicine model (predictive, preventive, personalized, and participatory**) to headache care, emphasizing early risk identification and patient-centered strategies.

6. **Evaluate the role of multimodal and multidisciplinary approaches** in the personalized management of headache, including behavioral interventions, lifestyle modifications, and digital health tools.

Key messages

- **Personalized medicine** in headache care addresses the **heterogeneity of disorders like migraine** by tailoring treatments to individual clinical and biological profiles.

- Recent advances in **targeted therapies and digital tools** allow for more precise and effective acute and preventive strategies.

- The **P4 model (Predictive, Preventive, Personalized, Participatory)** supports comprehensive, patient-centered care with active patient engagement.

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References

• Are we closer to achieving precision medicine for migraine treatment? A narrative review. *Cephalalgia.* 2024

• New management strategies for primary headache disorders: Insights from P4 medicine. *Heliyon.* 2024

• Towards precision medicine in migraine: Recent therapeutic advances and potential biomarkers to understand heterogeneity and treatment response. *Pharmacology & Therapeutics*. 2023