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Text Message Intervention for Teens with Type 1 Diabetes Preserves A1c: Results of an RCT

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Disclosures

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Purpose/Objectives

• Teens with T1D often struggle with self-management as they simultaneously face the normal developmental challenges of adolescence
• This often leads to suboptimal adherence and worsening A1c, which can hamper transfer to adult care and promote early complications in young adulthood

• **Aims:**
  – To identify and evaluate approaches to support the self-care of teens with T1D
  – To assess the impact on A1c of 2 interventions, problem-solving and text messaging, implemented in an RCT using a 2x2 factorial design
Methods/Study Population

- 2-site RCT with primary A1c outcome at 12 months
- Teens (N=301) aged 13-17 years, T1D ≥6 months, A1c 6.5-11.0%
- Teens were randomized to 1 of 4 groups:
  - Problem-solving intervention (PS) – addressing strategies to improve T1D self-care, focused on BG monitoring and insulin bolus dosing
  - 2-way SMS text messaging system (TM) – text message reminders (at self-selected times) to check BG and reply with the BG level
  - PS+TM
  - Usual care
- Study visits occurred every 3 months
- A1c was measured centrally
Results

• There was no significant difference in A1c over time by treatment group, but there was a significant difference in A1c over time by text messaging response rate

• Teens who did not receive TM reminders (p=.01) and teens who responded to 0-33% of TM reminders (p=.05) had significant increases in A1c from 0 to 12 months

• Teens who responded to >33% of TM reminders did not have a significant increase in A1c from 0 to 12 months (p=.8)
Response rates: Low TM responders: 0-33%, Moderate TM responders: 34-67%, High TM responders: 68-100%
Conclusion

• Over 1 year, greater response to TM reminders to check BG levels was associated with better glycemic control and no deterioration in A1c; the PS intervention did not impact glycemic control (A1c)

• Given the high penetration of mobile phones and the wide acceptance of text messaging among teens in general, it is encouraging that a 2-way SMS text messaging program can preserve A1c, thus preventing the expected deterioration often seen in teens with T1D

• Use of 2-way text messaging may help teens with T1D in their transition to self-care and transfer to adult providers
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