

TELEMEDICINE IN GESTATIONAL DIABETES (GDM): FEASIBILITY, DIABETOLOGICAL AND OBSTETRICS-NEONATAL OUTCOMES, COSTS AND PATIENT SATISFACTION ANALYSIS

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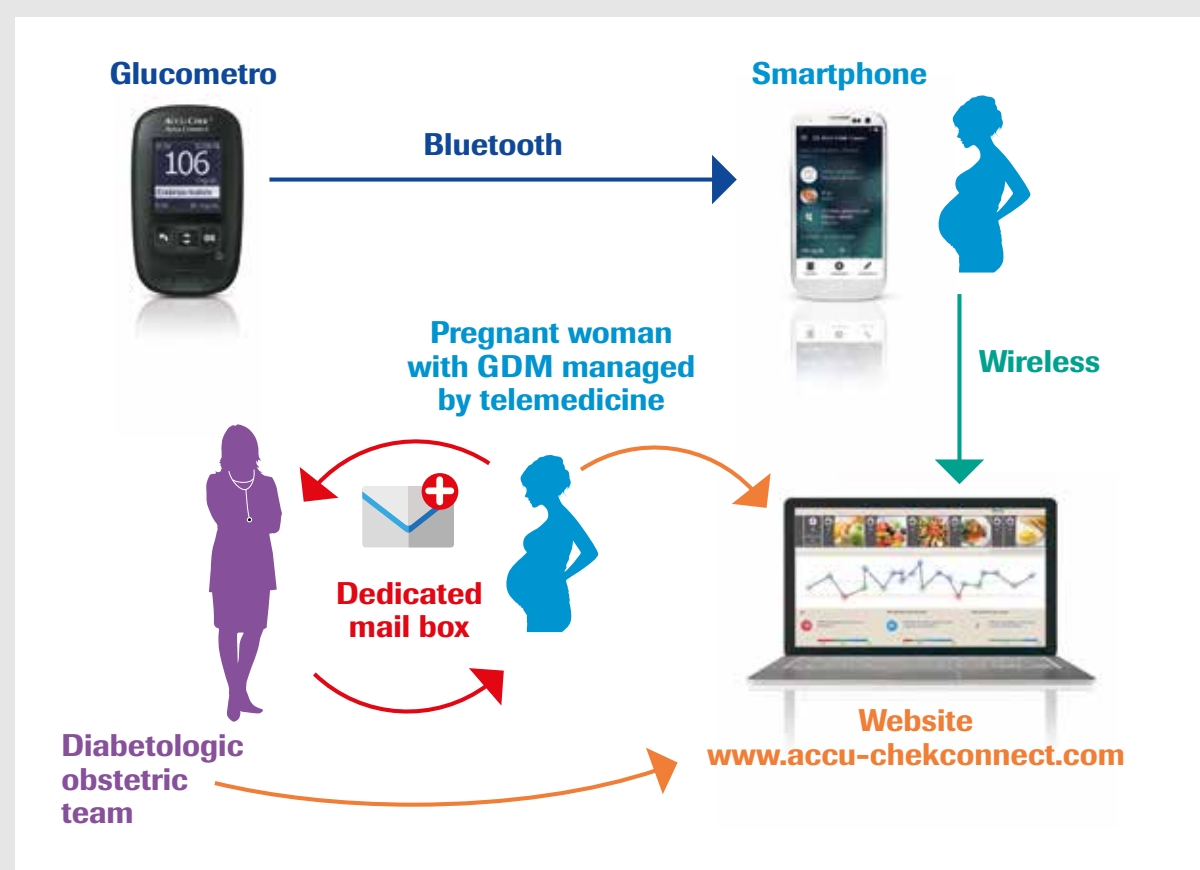
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BACKGROUND AND AIMS

Telemedicine, based on Information and Communication Technologies, allows to safely evaluate, diagnose, treat and follow patients in remote locations. It offers the opportunity to deliver remote care when and where it is needed without the building and staffing added facilities.

Our study was conducted to verify the feasibility, efficacy, safety, patient satisfaction and costs of telemedicine in the management of GDM patients referring to Sant'Anna Hospital (Turin - Italy).



METHODS

We enrolled 38 GDM women (from november 2015 to july 2016). After a clinical examination and dietician consult, patients were asked to perform two 6-points glucose profile in the first week of follow-up (with the Accu-Chek Aviva Connect[®] glucometer – app – web site).

In the following gestational weeks women received a feedback from diabetologists with instructions on how to proceed with self monitoring, depending on glycaemic values: patients in good control carried on with diet + two 6-points glucose profile/week, while patients that needed to start insulin treatment were asked to attend a clinical evaluation, then they also carried on with telemedicine follow-up.

US controls were planned at 32 and 36 weeks and a final clinical evaluation at 38 weeks.

After delivery, patients were asked to fill a satisfaction questionnaire about telemedicine management.

Patients characteristics	
Patients enrolled (nr)	38
Mean age (yr)	33
Mean BMI (kg/m ²)	22.6
Mean GA at GDM diagnosis (wks)	21

RESULTS

3 patients on 38 dropped-out because of technological problems. Mean women age was 33 years old, mean gestational age (GA) at diagnosis of GDM was 21 weeks. 2 patients were obese (BMI <31 kg/m²), but mean BMI was 22.6 kg/m².

27 patients delivered, at the mean GA of 38 weeks (range 38-41 weeks), 21 with spontaneous delivery (7 needed induction) and 6 with caesarean section (3 needed induction). Birth weights ranged from 2820 gr to 3770 gr.

Just 5 women required insulin therapy, 3 patients a basal-plus regimen and 2 patients a basal administration; mean insulin requirement was 19.6 UI/die (range 8-32 UI/die).

Among delivery complications we observed 1 polidramnios, 2 premature rupture of membranes, 1 preterm delivery threat, 1 APGAR 1/5/7, 1 surgical wound infection, 1 neonatal hypoglycaemia that required intensive care unit.

We sent an amount of 384 mails, that corresponds to 21 mails/woman (105 minutes of time dedicated to each woman). The objects of the mails were clinical or technical issues, educational or dietician support, planning of US or clinical controls. In our setting tele-

medicine led to a reduction of costs to follow-up each woman of -7.5% for GDM in diet therapy and of -27.1% for GDM requiring insulin treatment.

Finally, satisfaction questionnaires showed an excellent score in favour of telemedicine (4.5 on 5); women particular trusted in continuous monitoring obtainable through telemedicine and appreciated the saving of time/money and the easy way to be connected to physicians. The only negative aspect reported was initial difficulty with the app account setup, always easily solved.

Obstetrician-gynecological-neonatal outcomes	
Delivery (nr pt)	27
GA at delivery (wks, range/mean)	38-41/38
Spontaneous delivery (nr pt)	21
C-sections (nr pt)	6
Birth weight (gr, range)	2820-3770
Diabetological outcomes	
Diet therapy (nr pt)	30
Insulin basal therapy (nr pt)	2
Insulin basal-plus therapy (nr pt)	3
Mean insulin requirement (UI/die, range/mean)	8-32/19.6

CONCLUSIONS

Despite the small number of the sample, in our ambulatory setting telemedicine has showed to be a feasible, safe and appreciated option to follow-up patients diagnosed with GDM. More data are needed to better evaluate the possible saving of time and cost-effectiveness of telemedicine compared to current normal practice in the management of GDM.