Karolinska Institutet

Kvinnors och barns hälsa, Karolinska Institutet

The role of eating disorders for pregnancy, neonatal outcome and the child's early development

AKADEMISK AVHANDLING
som för avläggande av medicine doktorsexamen vid Karolinska Institutet offentligen försvaras i Kirurgisalen, Karolinska Universitetssjukhuset, Solna 171 76 Stockholm

Fredagen den 20/12-2013, kl 09.00

av

Saloua Koubaa
Barnmorska

Huvudhandledare:
Angelica Lindén Hirschberg
Professor
Institution för Kvinnors och barns hälsa, Karolinska Institutet

Bihandledare:
Tore Hällström
Professor
Klinisk neurovetenskap, Karolinska Institutet, Neurovetenskap och fysiologi, Göteborgs Universitet

Fakultetsopponent:
Agneta Skoog Svanberg
Docent
Institutionen för kvinnors och barns hälsa, Obstetrik och gynekologi, Uppsala Universitet

Betygsnämnd:
Margaretha Bågedahl-Strindlund
Docent
Karolinska Institutet, Institutionen för klinisk neurovetenskap

Bruno Hägglöf
Umeå universitet, Institutionen för klinisk vetenskap, avd för barn- och ungdomspsykiatri

Göran Berg
Docent
Linköpings Universitet, Institutionen för klinisk och experimentell medicin, obst gyn.

Stockholm 2013

ABSTRACT

Little is known about the impact of eating disorders (ED) on pregnancy, infant growth and cognitive development. Preliminary reports indicate increased complications during pregnancy and lower birth weight in children of mothers with ED. There is need of prospective long-term follow-up of growth and cognitive development of the children of these mothers.

Aims: To study the impact of ED on pregnancy and neonatal outcomes, maternal adjustment, and infant growth and cognitive development compared with controls. **Method:** Forty-nine nulliparous, nonsmoking women with a history of ED, 24 with anorexia nervosa (AN), 20 with bulimia nervosa (BN), 5 with non-specific ED (EDNOS), and 68 healthy controls were followed during pregnancy and up to three months postpartum. The women were recruited in early pregnancy from 13 antenatal clinics in northwestern Stockholm. Three months after delivery, the women completed the maternal adjustment and maternal attitude questionnaire (MAMA) and were asked about mental health problems postpartum. Furthermore, the children's growth (weight, height and head circumference) and neurocognitive development (questionnaire: Five to Fifteen) were followed up to five years of age. Blood samples during early pregnancy were analyzed for nutrition-related markers and stress factors (ferritin, cortisol, thyroid-stimulating hormone (TSH), free thyroxine (T4), insulin, insulin-like growth factor-I and binding protein 1). Serum levels of these biomarkers were related to head circumference and neurocognitive development of the offspring.

Result: Eleven of the patients (22%) had verified relapse of ED during pregnancy. Pregnant women with past or active ED were at greater risk of delivering infants being small for gestational age, having lower birth weight and smaller head circumference than controls (Paper I). Three months after delivery**,** 92% of mothers with ED before pregnancy reported problems regarding their maternal adjustment compared to 13% in the control group, whereas there were no differences between the subgroups of ED. Fifty percent of mothers with previous ED reported that they had been in contact with health services after delivery because of depression or other mental problems (Paper II). Children of mothers with previous ED demonstrated an early catch-up in body mass index, while the average head circumference continued to be delayed up to at least 18 months of age. The reduced head growth was related to delayed neurocognitive development in the ED group (Paper III). Serum levels of ferritin were significantly lower in the AN group, but not in the BN group, and correlated to impaired memory in the children at five years of age (Paper IV). Furthermore, maternal serum levels of free T4 were positively associated with head circumference of the children in both the AN group and the BN group, but not in the controls.

Conclusion: Pregnant women with a history of AN or BN should be considered a risk group for prenatal and delivery complications. More research is needed, especially directed to the long-term growth and neurocognitive development of these children. Health care needs to improve its methods to identify a possible history of AN and BN in pregnant women and optimize care in order to prevent adverse health effects for mother and baby.

Keywords: Eating disorders, Anorexia nervosa, Bulimia nervosa, Pregnancy,Maternal adjustment, Depression, Growth development, Head circumference, Offspring, Neurocognitive function, Nutrition, Stress, Health care program.