Haftungsausschluss

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Introduction

Today obesity is an epidemic. Within Europe, the prevalence of obesity is 20–30% with a tendency to increase further. Obesity is associated with severe complications like diabetes mellitus, cardiovascular disease, increased risk for venous thromboembolism (VTE) and metabolic syndrome. Especially availability of efficient methods which do not further enhance the cardiovascular and thromboembolic risk in obese women is an important point. Using contraception to prevent unwanted pregnancies is recommended to all women whatever their weight, as it reduces the risks of unplanned pregnancy, which is higher in women with overweight. Progestin-only contraceptives and IUDs have no or minimal metabolic effects and are first choices options, also it has to be taken in account that oral progestins and the implant might have lower efficacy in very obese women. CHC are associated with a higher risk for VTE in obese women, but should be used if other methods are not acceptable. A long-cycle or use of preparations with 30 mcg EE can contribute to improve efficacy. 

Efficacy of Combined Hormonal Contraceptives (CHC)

CHC do not typically cause weight increase [4]. There is a controversial discussion about the efficacy of these methods in obese women and there is concern with regard to safety (thromboembolic and cardiovascular risk) especially in CHC containing ethinylestradiol (EE). Recent published pharmacokinetic studies in obese women have improved our understanding of potential efficacy problems.

Key words: contraception, obesity, cardiovascular risk, contraceptive pill, vaginal ring

Contraception in Obese Women

G. S. Merki-Feld

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150 mcg LNG in an intermittend regi-
men (21/7) [10]. Also in this study time to
reach steady-state was significantly
longer in obese women in comparison to
normal weight controls. Plasma levels of
the hormones however were higher with
the 30 mcg EE/150 mcg LNG regimen.
Even if changes in pharmacokinetics did
not correlate with end-organ suppression
the women using the higher dosage ex-
perienced better ovarian suppression.
However, both regimen were with regard
to pharmacokinetic parameters superior
in comparison to an intermittend 20 mcg
EE/100 mcg LNG regimen. These data
allow only cautious and preliminary re-
commendations with regard to COC use
in obese patients:
- Pharmacokinetic data are only avail-
able for COCs containing the proges-
tin levonorgestrel.
- Use condoms for 10–14 days in COC
newstarts until steady-state is
achieved.
- 30 mcg EE/150 mcg LNG might be
more effective than 20 mcg EE/
100 mcg LNG.
- Continuous use of 20 mcg EE/
100 mcg LNG is better than a 21/7 regi-
men, but breakthrough bleeding has to be taken into account and
should not limit compliance.

It seems reasonable to postulate that ex-
tended-regimen is an option to reduce
contraceptive failures in obese women.
Prospective studies on extended-cycle
preparations in normal weight popula-
tions do not indicate an increased effica-
cy [12, 13]. Across European countries
extended regimen are off-label. A disad-
vantage of these regimen is the unpredict-
dictable bleeding pattern, which might
further compromise adherence in less
compliant women.

Ethinylestradiol serum levels are lower
in obese women in comparison to normal
weight controls with use of the com-
bined hormonal contraceptive vaginal
ring (CVR) (EE/etonogestrel) [14].
Etonogestrel levels, which are believed to
be of higher importance for the effica-
cy of CHC do not differ and are main-
tained over more than 4–6 weeks of use,
in a range higher than with the use of the
etonogestrel-releasing contraceptive im-
plant. Follicular development was min-
imal in both groups [15]. These results are
reassuring that the CVR is effective in
obese women. For the combined con-
trceptive patch no kinetic data in obese
women are available. However, in an ob-
servational study increased body weight
was associated with an increased rate of
pregnancy. The higher pregnancy rate af-
fected women with a weight of ≥ 90 kg
(≥ 198 lb) [6]. Potentially variations in
the plasma levels of the steroids norelge-
stromin and ethinylestradiol between
obese and normal weight users cause the
increased pregnancy rate. The patch
study included women of a wider range
of body weights (± 35% ideal body
weight) than most CHC studies (± 20%
ideal body weight) [6]. Therefore, it
remains unclear if there is indeed a differ-
ence between the patch and COCs with
regard to efficacy in women ≥ 90 kg.
Nevertheless, the patch label indicates a
cut-off of ≥ 90 kg (≥ 198 lb) as a concern
for increased failure risk.

Safety of CHC: Risk for VTE and
Arterial Events in CHC Users
Baseline risk for VTE in obese women
ranges from 6–11/10,000 women years
(WY) [16–19]. The risk is 2–4 fold in-
creased in comparison to normal weight
women and increases further with age
[20–23]. Age has to be considered as a
strong additional risk factor for VTE in
obese and non-obese women [16, 18].
In obese or very obese women the VTE risk
is 2–3-fold in comparison to normal
weight CHC users [22, 24].

Long-term use of CHC does not induce
atherosclerosis in animal models [25].
Previous studies indicated that CHC with
desogestrel and gestodene might be as-
associated with a lower increase in cardio-
vascular risk in comparison to COCs
containing levonorgestrel (LNG) [26].
This could not be confirmed in a recent
cohort study [27]. There were only mi-
nor risk variations between the patch and
the vaginal ring and combined pills. In a
large prospective cohort study, vaginal
ring use and combined COC use were as-
associated with a similar risk of arterial
thromboembolic events (ATE) [28].
Obesity was associated with an addition-
al 1.5–4.2 fold increased risk for isch-
emic stroke in users of CHC [18, 29].
There is no clear evidence whether obese
women have an increased risk of myo-
cardial infarction [24].

CHC do further increase the risk for
VTE and ATE in obese women. There-
fore they should only be used if no other
acceptable contraceptive methods like
progestin-only contraceptives or intra-
uterine devices are available or accept-
able – or if benefits still outweigh the
risks [1]. Obese women should be in-
formed of their risk of thrombosis and
should be counseled on the added risk of
taking combined hormonal contracep-
tives.

Progestin-Only Methods
Progestogen-only contraceptives (POC)
include progestogen-only pills (POP)
with norethisterone, levonorgestrel or
desogestrel; levonorgestrel-releasing in-
trauterine systems (LNG-IUS); injec-
tions with depot-medroxy-progesterone
acetate and subcutaneous implants re-
leasing etonogestrel or levonorgestrel.
From the standpoint of venous and arte-
rial thrombosis, progestin-only agents
are the safest hormonal methods [30].
The mode of action ranges from full ovu-
lation suppression to a local barrier to
sperrt transport by increasing viscosity
of cervical mucus. Non-contraceptive
benefits of the LNG-IUS and depot-me-
droxy-progesterone acetate include the
reduction of the intensity and duration of
menstrual bleeding, inhibition of the
growth of myoma and a positive effect
on endometriosis [31–34]. A special
benefit of the desogestrel-only pill is a
positive effect on menstrual migraine, as
well as non-menstrual migraine head-
aches [35–37]. A disadvantage of DMPA
is the unpredictable weight-gain in a sub-
set of women [38]. There is limited evi-
dence of weight-gain in users of proges-
tin-only pills [39]. This drawback and
the unpredictable bleeding pattern of
most POC may limit the acceptability of
these methods in some women. There is
limited data on the efficacy of Desoges-
trel 75mcg in obese women. This might
restrict the use. Ovarian ultrasound
might help the clinician to decide whether
an obese patients is sufficient protect-
ed from pregnancy with this pill.
Desogestrel 75 mcg is not associated
with an increased risk for thromboembol-
ic events or arterial embolic events [27–
40]. The impact of desogestrel 75 mcg
on plasma lipids and glucose metabolism
is minimal [41, 42].

In the CHOICE study the efficacy of the
etonogestrel-releasing implant was not
reduced in obese women [43]. Plasma
levels of etonogestrel (ENG) are lower in
Intrauterine Devices (IUD) and Intrauterine Systems (IUS)

Copper-IUD or the levonorgestrel-releasing device are highly recommended efficient and safe options in obese women. Copper-IUDs do neither affect metabolic parameters, nor the risk for VTE. They are highly efficient and efficacy is not affected by weight or BMI, because the contraceptive acts locally in the uterus [43, 53]. Contraindications (CI) like ongoing pregnancy, uterus malformation, active pelvic inflammatory disease must be excluded. Increased STD risk, hysteroscopy > 9 cm and nulliparity need precautions before prescription and insertion and have to be weighed against other benefits. With the levonorgestrel-releasing device LNG-plasma levels are lower in obese women in comparison to non-obese [54]. Because of the local effects of this system in the uterine cavity the efficacy should not be compromised in obese women. The system is not associated with an increased risk of VTE [40]. In an observational study the removal rate was > 20 % in obese women [55]. For women with heavy menstrual bleeding the IUS is the better option.

Emergency Contraception (EC)

Insertion of a copper-IUD is the most efficient method for EC, but access is not available everywhere, therefore, other options are highly recommended. MPA and levonorgestrel are very effective in normal weight and overweight women [47, 48]. Despite this fact, the trend towards decreasing through MPA levels as the BMI increases [49, 50]. This observation caused uncertainty in regard to the effectiveness in women with BMI > 35 kg/m². DMPA is frequently used all over the world in women with obesity and other cardiovascular risk factors. Hemostatic risk markers do not indicate changes and therefore do not suggest an increased risk for VTE [51]. One observational study reported an elevated VTE risk with DMPA, but was limited by a small number of cases [52]. DMPA-intramuscular and sc are effective contraceptives in overweight and obese women. When balancing risks vs. benefits of this contraceptive method it should be considered, that in comparison to CHC, safety and efficacy of DMPA are higher.

Conflict of Interest

During the past years G. S. Merki-Feld had financial relationship (lecturer, member of advisory boards and/or consultant) with Bayer-Schering Pharma, MSD and HRA Pharma.

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Mitteilungen aus der Redaktion

Die meistgelesenen Artikel

Speculum

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