Methylphenidate (Ritaline®/Concerta®) prescription for treating ADHD among school-aged children in a Swiss population

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What is ADHD?

- Attention deficit/hyperactivity disorder (ADHD) is a psychiatric disorder characterized by
  - Hyperactivity (hyperkinetic disorder)
  - Inattention
  - Impulsivity
- It mainly affects children aged 5-14 (child’s most common psychiatric disorder)
- Difficult diagnosis based on multiple observations and a psychiatric evaluation
How is it treated?

- Mainly pharmacological treatment
  - Currently in Switzerland, methylphenidate (MPH) (brand names Ritaline®, Concerta®)
  - MPH is a central nervous system stimulant (patented in 1954 by Ciba) with restricted prescription (Lstup)
- Psycho-social therapy (behavior modification)
- Both therapies can be combined for better results (Evaluations of the effectiveness of the therapies available in MTA Cooperative Group studies, 1999 and 2007)
Political and public concern about overmedication for ADHD

- ADHD diagnosis and MPH prescription increasing worldwide and in Switzerland (Montandon et Médioni, 2002)
- Various concerns: overdiagnosis and overprescription, actual existence of the disease, side effects, future substance abuse, etc.
- Parliamentary interventions at the national council (6 between 2002 and 2006) and one at the grand conseil vaudois

mandate from the Service de la santé publique vaudoise to monitor the evolution of MPH prescription in the canton of Vaud from 2002 to 2005
Method

- Analyse of the information available from all pharmacy claims of MPH delivery in the canton of Vaud in 2002 and 2005
  - Variables: sex, age and residence of patient. Date of prescription, place of practice and medical specialization of the prescriber
- Patients included if living in the canton and received at least one prescription in the year
- Analysis only on 5-14 yo children (for best comparability with most studies)
Main results

Population description:

- **567** patients in 2002 and **793** in 2005
- Girls: **14.6%** of the population in 2002 and **19.5%** in 2005
- Mean ages: **11.1 yo** in 2002 and **10.7 yo** in 2005
Prevalence of MPH prescription (%) in 2002 and 2005 by sex for children aged 5-14 yo

<table>
<thead>
<tr>
<th></th>
<th>2002</th>
<th>2005</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Girls</td>
<td>0.22</td>
<td>0.41</td>
<td>0.19</td>
</tr>
<tr>
<td>Boys</td>
<td>1.19</td>
<td>1.54</td>
<td>0.35</td>
</tr>
<tr>
<td>Total</td>
<td>1.41</td>
<td>1.95</td>
<td>0.54</td>
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</tbody>
</table>

Girls: 0.22% in 2002, 0.41% in 2005
Boys: 1.19% in 2002, 1.54% in 2005
Total: 1.41% in 2002, 1.95% in 2005
Prevalence of MPH prescription (%) in 2002 and 2005 by age group for children aged 5-14 yo
Number of patients (5-14 yo) by medical specialty of prescriber in the canton of Vaud in 2002 and 2005

<table>
<thead>
<tr>
<th>Medical specialty</th>
<th>2002</th>
<th>2005</th>
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<tbody>
<tr>
<td>N (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatrics</td>
<td>364 (69)</td>
<td>575 (70)</td>
</tr>
<tr>
<td>Psychiatry and pedopsychiatry</td>
<td>84 (16)</td>
<td>138 (17)</td>
</tr>
<tr>
<td>General medicine</td>
<td>65 (12)</td>
<td>88 (11)</td>
</tr>
<tr>
<td>Internal medicine</td>
<td>7 (1)</td>
<td>9 (1)</td>
</tr>
<tr>
<td>Other</td>
<td>11 (2)</td>
<td>6 (1)</td>
</tr>
<tr>
<td>Total</td>
<td>531</td>
<td>816</td>
</tr>
</tbody>
</table>
National & international comparisons

- Comparisons must be made cautiously because of heterogeneity of:
  - age groups
  - substances (MPH, psychostimulants, all drugs)
  - source of data (pharmacies, parents)
  - Study years

- However it seems that:
  - Strong increase in the USA in the 1990’s. Strong increase in Europe in the 2000’s
  - Levels: USA > Europe > Switzerland > Vaud
Summary of the main results

- Increase in prescription for all groups (boys, girls, 5-9 yo, 10-14 yo) but especially among girls
- Most children received their prescriptions by pediatricians or (pedo)psychiatrists
- In summary, level of prescription is rising but is still low in comparison to similar studies in other countries
Limitations of this study

- Only indirect estimation of the true ADHD prevalence
- No information on prescription adequacy
- Our figures concern MPH delivery but we have no control over MPH actual consumption

Remark

- In the near future, atomoxetine (no compulsory declaration) will be available in Switzerland. It might be more difficult to monitor drug consumption for treating ADHD
Conclusion

- Comparatively modest level of MPH treatment but increasing in all categories.
- Are we catching up with American children? (risk of abuse?)
  - *third comparison point needed before talking about increasing trend*
- Vigilence is recommended and recall of best practice guidelines to practitioners is advised.
« Calvin on Ritalin » (unpublished cartoon)
« Off the Ritalin and high on life! »