POST HYSTERECTOMY WITHOUT OOPHORECTOMY

CASE 4 PRESENTATION:
42 year old female pre-menopausal woman without menstrual cycles
Hysterectomy due to uterine fibroids 1 year ago; ovaries intact, no HRT

KEY SYMPTOMS:
• Hot flashes
• Cold hands and feet
• Depression
• Severe morning fatigue
• Allergies (getting worse)
• Decrease libido

<table>
<thead>
<tr>
<th>HORMONE TEST</th>
<th>IN RANGE</th>
<th>OUT OF RANGE</th>
<th>UNITS</th>
<th>RANGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>E2 (Estradiol)</td>
<td></td>
<td>&lt;0.5 L</td>
<td>pg/ml</td>
<td>1.0-1.5</td>
</tr>
<tr>
<td>Pg (Progestrone)</td>
<td></td>
<td>&lt;15 L</td>
<td>pg/ml</td>
<td>25-100</td>
</tr>
<tr>
<td>Pg/E2 Ratio</td>
<td></td>
<td>30 L</td>
<td>pg/ml</td>
<td>50-100</td>
</tr>
<tr>
<td>Testosterone</td>
<td></td>
<td>10 L</td>
<td>pg/ml</td>
<td>20-50</td>
</tr>
<tr>
<td>DHEA-s</td>
<td></td>
<td>4.5</td>
<td>ng/ml</td>
<td>3-10</td>
</tr>
<tr>
<td>AM Cortisol</td>
<td></td>
<td>3.0</td>
<td>ng/ml</td>
<td>3-8</td>
</tr>
<tr>
<td>PM Cortisol</td>
<td></td>
<td>0.3 L</td>
<td>ng/ml</td>
<td>.5-1.5</td>
</tr>
</tbody>
</table>

ANALYSIS:
• Low estradiol, progesterone and testosterone suggest suboptimal ovarian function, a common occurrence after hysterectomy (without oophorectomy) due to surgical trauma and/or ovarian blood flow disruption.
• Progesterone in a hysterectomized woman is also important to keep estrogen and thyroid balanced avoiding the development of E2 dominance symptoms.
• Estrogen deficiency symptoms can include vaginal dryness, memory lapses, vasomotor symptoms and incontinence.
• Low bio-available testosterone may be associated with decreased sex drive, depressed mood, decreased enjoyment of life and vaginal dryness. In a recent study by Orozco, salivary testosterone also correlated to bone density (Orozco P et al. Eur J Epidemiol 2000;16-907-912.)
• Fatigue and worsening allergies is consistent with failure to elevate morning cortisol.
• Impaired adrenal function is common after stressors such as surgery.
• Cortisol is necessary for proper action of thyroid hormones and low cortisol can present with symptoms of hypothyroidism despite normal thyroid tests.

CLINICAL PEARLS:
Ovaries were not removed; however test results and symptoms suggest post menopausal status. Low adrenal levels often exacerbate sex hormone deficiency symptoms. DHEA is a precursor to sex hormones i.e. testosterone and estradiol.

TREATMENT CONSIDERATIONS:
• Bio-identical estradiol and progesterone (BHRT)
• Testosterone replacement.
• Addressing Adrenal function is vital in this case: Vitamins B5, B6, and C support adrenal function. Recommend obtaining a diurnal cortisol (4X a day collection) to assess full adrenal function.
• Herbal adaptogens will improve adrenal hormone production: Licorice root, Siberian Ginseng, Rhodiola, and Ashwagandha can be used.
• Lifestyle changes: promote good sleep habits, reduce stressors, and learn relaxation techniques such as meditation/deep breathing exercise.
• Improve nutrition by eliminating simple carbohydrates. Add whole grain foods that will support adrenal and immune function.
• Obtain a baseline bone density evaluating current bone health status.
• Retesting in 3 months is indicated if symptoms are not resolving; dose adjustments can be made on the steroid hormones.