Client: HMSA: PQSR 2009

Measure Title: LIVER FUNCTION TEST (LFT) MONITORING FOR PATIENTS ON VALPROIC ACID

Disease State: Liver function

Indicator Classification: Medication Monitoring

Strength of Recommendation: C

Organizations Providing Recommendation:
- National Headache Foundation
- Federal Drug Administration

Clinical Intent: To ensure that eligible members on valproic acid have a liver function test in order to monitor therapy.

Physician Specialties (suggested): Refer to PQSR 2009 Clinical Measures by Specialty.

Disease Burden:
- Valproic acid is commonly used to treat seizure and mood disorders.[1, 2]
- Epilepsy and seizures affect 2.9 million Americans of all ages [3], at an estimated annual cost of $12.5 billion in direct and indirect costs.[4] Approximately 200,000 new cases of seizures and epilepsy occur each year.[4, 5]
- The World Health Organization monitors adverse drug reactions. In a recent systematic investigation of adverse drug reactions leading to liver injury and fatalities (88.3% of cases in the United States), valproate was the third most common drug associated with such fatalities.[6]

Reason for Indicated Intervention or Treatment:
- Valproic acid has a complex pharmacokinetic profile as a result of individual differences in metabolism and concentration-dependent protein binding, resulting in a significant variation in blood concentration for a given dose.[7]
- The therapeutic dosing range for valproic acid is narrow; concentrations of 50/mg/L or higher are required in order to see therapeutic effects, while concentrations exceeding 100 mg/dL have been associated with toxicity.[7]
- Valproic acid, even in normal range, has been associated with hepatic failure and multiple hematologic abnormalities, including thrombocytopenia.[8-10]

Evidence Supporting Intervention or Treatment:
- Several retrospective studies of patients taking valproic acid have shown that fatal hepatotoxicity is a side effect of the medication.[11-14] From 1987 to 1993, 29 patients on valproic acid developed fatal hepatotoxicity...
and in a study of adverse drug reactions in the UK, anticonvulsants, and, more specifically, sodium valproate were associated with the greatest number of fatalities and hepatotoxicity.

Clinical Recommendations

- The National Headache Foundation guidelines recommend routine monitoring of liver function tests for patients taking Valproic acid, however the frequency of monitoring is not stated.[15]
- The FDA black box warning for Valproic acid indicates that patients taking this medication have an increased risk for developing hepatotoxicity and pancreatitis. Therefore they recommend performing pretreatment liver function tests and frequent monitoring through therapy, particularly within the first 6 months.[16]

Source

Health Benchmarks, Inc.

<table>
<thead>
<tr>
<th>Denominator</th>
<th>Definition</th>
<th>Continuously enrolled members who had at least a 180 days supply of valproic acid during the year prior to the measurement year.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Denominator Exclusion</td>
<td>Exclusion Definition</td>
<td>N/A</td>
</tr>
<tr>
<td>Numerator</td>
<td>Definition</td>
<td>Members who have had appropriate monitoring lab work (i.e. hepatic function panel, general health panel, AST, ALT) completed during the 0–365 days after the index date.</td>
</tr>
<tr>
<td>Physician Attribution</td>
<td>Description</td>
<td>Score the physician (in the selected specialties) who prescribed the index date prescription.</td>
</tr>
</tbody>
</table>

References


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