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Alternative Treatment with Red Yeast Rice to Reduce Hyperlipidemia

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**PATHOPHYSIOLOGY OF HYPERLIPIDEMIA**

- Excess lipid forms plaque in the arteries reducing blood flow (See Figure 4).
- LDL cholesterol transfers cholesterol to cells in tissues and is equal to the risk of atherosclerosis in producing coronary disease (Papadakis, Turvey, & McPhee, 2011).
- HDL cholesterol transfers cholesterol from the cells in tissues to be eliminated and is inversely equal to the risk of atherosclerosis (Papadakis et al., 2013).

**EFFICACY OF RYR THERAPY**

- RYR was compared to placebo such as the American Heart Step 1 Diet, physiologic lifestyle producing varying ingredient composition.
- The meta-analysis conducted by Liu et al. (2006) evaluated the enzyme HMG-CoA reductase inhibition (See Figure 2) (Netherton et al., 2013).
- RYR comes in variations that do not have equal total cholesterol and total cholesterol when compared to placebo without increased niacin raising RYR a potential treatment option (Becker et al., 2010).
- Halbert et al. (2010) trial reflected RYR side effects were tolerated equally with both groups experiencing decreased myalgia and achieving comparable LDL cholesterol values therefore not supporting RYR as an alternative option.

**EFFICACY OF STATINS VS RYR**

- Three trials involving prescription statin intervention reflected a reduction in coronary events by 23.34% and coronary heart disease mortality by 20.42% (Yang & Mouna, 2012).
- Becker et al. (2009) compared RYR to simvastatin reflecting significant LDL reduction without significant differentiation between test groups.
- Halbert et al. (2010) compared tolerability of pravastatin to RYR with 67% in RYR group reporting pain and 68% in the pravastatin group therefore similar tolerability.

**STATINS VS RYR SIDE EFFECTS**

- Statins are generally well tolerated, possible side effects include: myalgia, myositis, rhabdomyolysis, and hepatitis with 10-15% of statin users developing myalgia (Bardal et al., 2011).
- 37% statin users experience myalgia when trying to second a statin (Adil & Jacobson, 2011).
- RYR side effects include: dizziness, decreased appetite, nausea, abdominal pain, distension, and diarrhea occurring in 5-36% of patients (Liu et al., 2006).
- Halbert et al. (2010) compared tolerability of pravastatin to RYR with 67% in RYR group reporting pain and 68% in the pravastatin group therefore similar tolerability.

**STATINS VS RYR SAFETY**

- Hofer et al. (2001) analyzed 9 different commercially available RYR products and discovered varying monacolin contents from 0.45% and toxic cyanide byproduct in 7 out of 9 preparations.
- No studies are available regarding long-term cardiovascular prevention with RYR as with statin use.
- Statin safety concern addressed by the FDA ten years ago involved Bayar removing the statin, cerivastatin, after 31 patients died from rhabdomyolysis (Bardal et al., 2011).
- Between 1987 and 2011 the FDA recorded 42 deaths or one death per million 30-day supply prescriptions of statins from rhabdomyolysis (Siika et al., 2011).

**REFERENCES**


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