Evaluation of an Isolated Serum Alkaline Phosphatase (ALP) elevation

Consider

Possible causes

Further investigations

Pregnancy
(increased placental isoenzyme)

Age < 20 years
(may be physiological)

Due to the skewed distribution of ALP, levels of up to 400 IU/L are not uncommon in growth periods. Levels higher than this have also been reported.

Post menopausal usually < 150 IU/L.

ALP Isoenzymes

Predominant bone

Bone scan (if indicated)

Paget’s disease

Healing fractures

CKD mineral and bone disorder

Hyperparathyroidism

Hyperthyroidism

Malignancy
(prostate, breast, kidney, lymphoma, etc.)

Osteomalacia/Rickets
(due to Vitamin D deficiency or resistance)

Placental (Regan isoenzyme)

Malignancy (bronchus, ovary, pancreas)

Predominant liver

Cholestatic liver disease

THI pattern (child)

Transient Hyperphosphatasemia of Infancy.

Typical age < 5 years; very high ALP (> 700).

May follow a viral illness.

Benign and asymptomatic.

High ALP persists for 8–12 weeks.